JANUARY 5, 1935

Railway Age

FOUNDED IN 1856

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KERITE

50-1935

ACROSS THE YEARS
ITS INFLUENCE WIDENS

1935
1930
1920
1910
1900
1890
1880
1870
1860
1850

THE KERITE INSULATED WIRE & CABLE COMPANY INC
NEW YORK CHICAGO SAN FRANCISCO

EXIDE-IRONCLAD BATTERIES HAVE PROVED THEIR ECONOMY IN AIR-CONDITIONING SERVICE

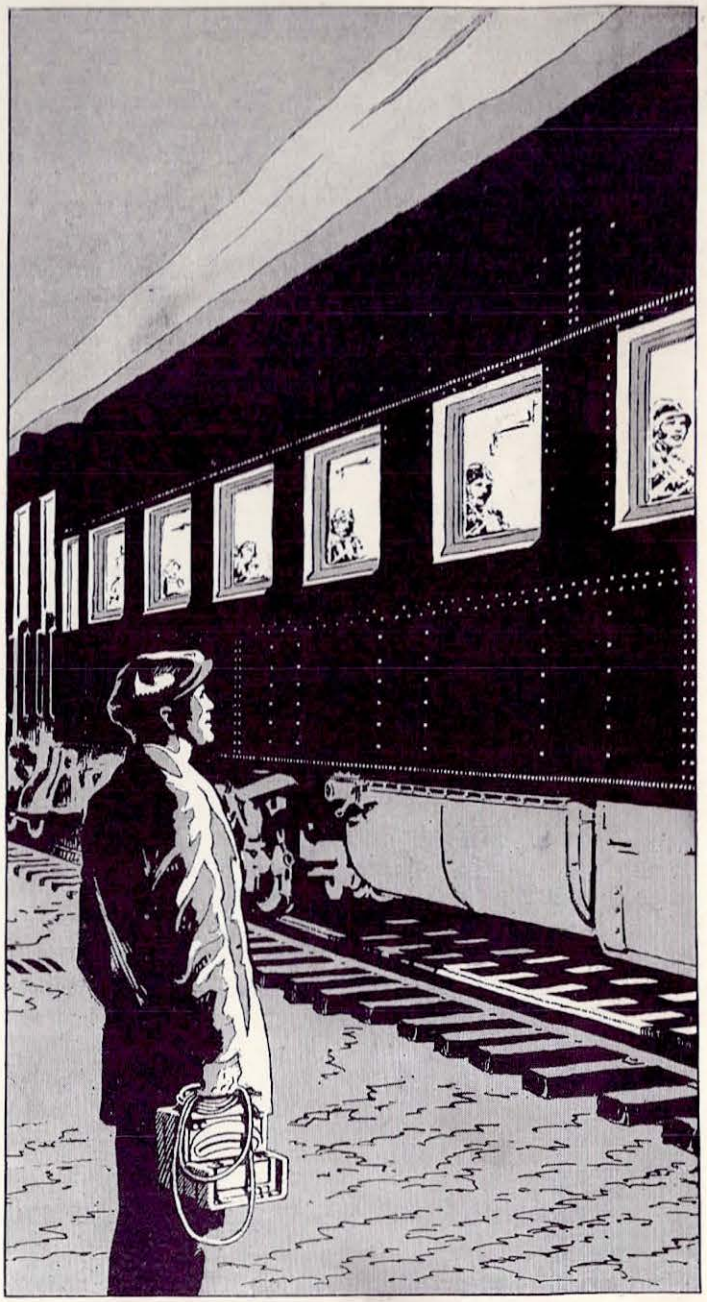
The double load of lighting a passenger car and cooling and circulating its air is economically handled by Exide-Ironclads. These batteries have played a prominent part in air-conditioning development and have consistently proved their unusual economy, performance and long life.

For the outstanding record they have made, the unique design of Exide-Ironclad positive plates is responsible in part. Now a new feature adds further to their dependability and freedom from trouble. They are equipped with Exide Mipor Separators, the permanent storage battery plate insulator—at no increase in price.

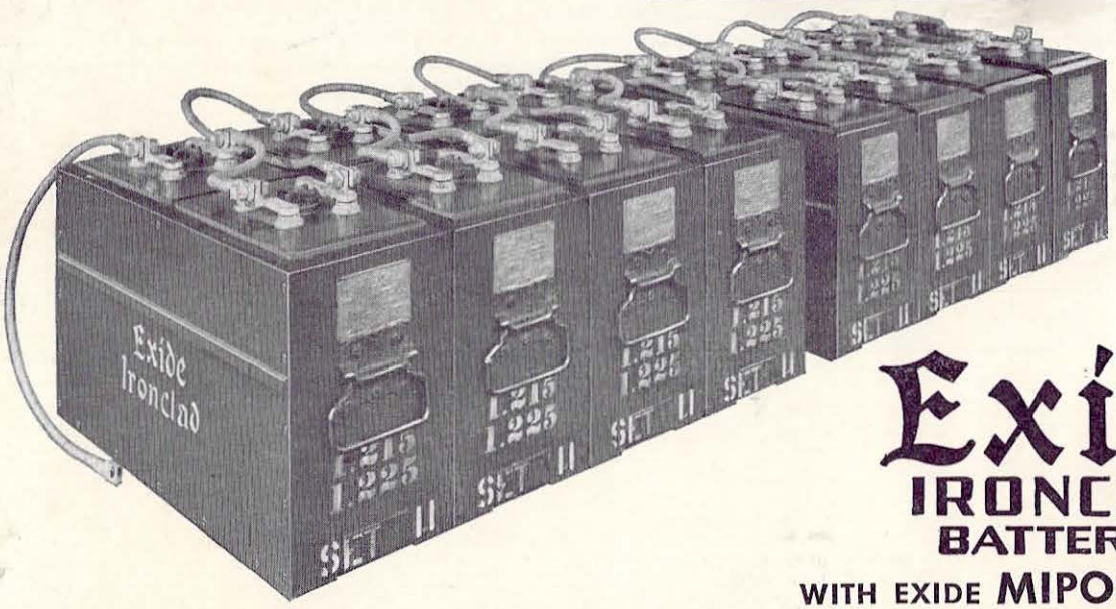
Exide Mipor is vulcanized rubber, permeated by pores so numerous as to permit free diffusion of the electrolyte, and so microscopic in size as to form a barrier to the smallest particles of active material. It is immune to battery heat, unaffected by the electrolyte and by vibration. Exide Mipor Separators have been proved by years of tests, both in the laboratory and in actual service, to last the entire long life of an Exide-Ironclad Battery.

Write for folder giving full details on the new Exide Mipor Separator, the permanent storage battery plate insulator.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto



NRA CODE

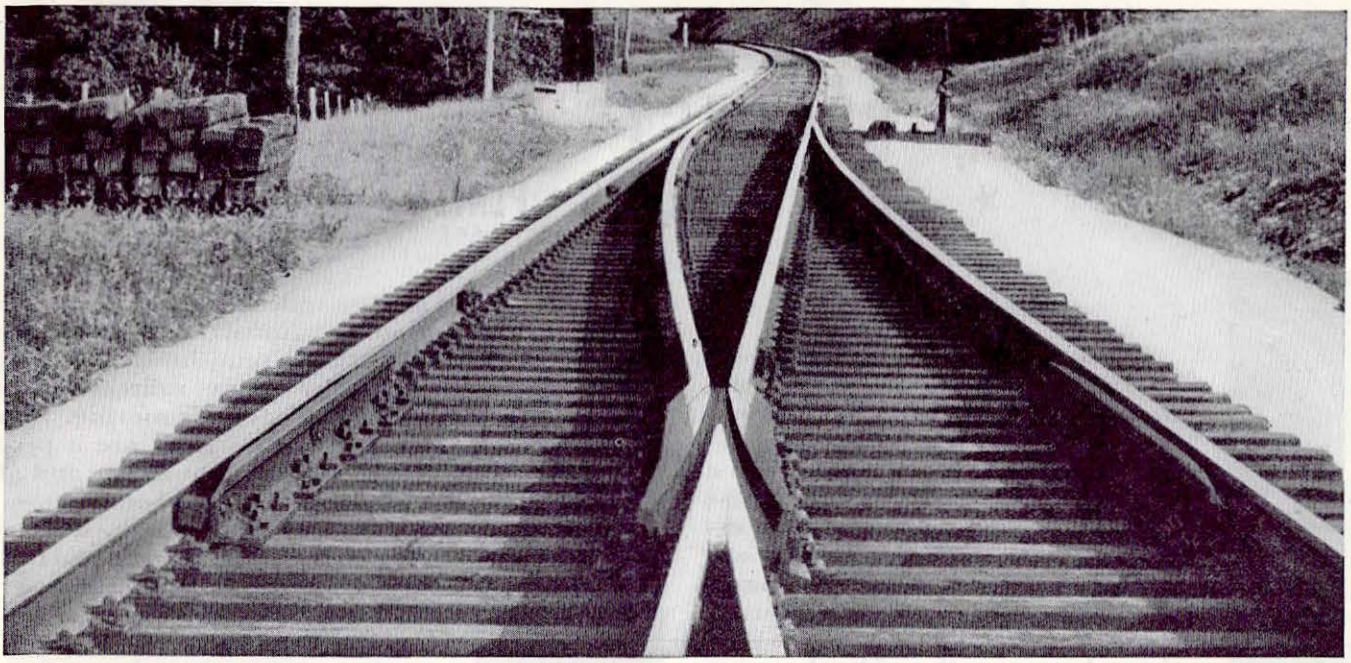


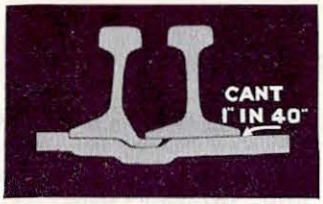
Exide
IRONCLAD
BATTERIES
WITH EXIDE MIPOR SEPARATORS

"MIPOR," Reg. U. S. Pat. Off.

Published weekly by Simmons-Boardman Publishing Company, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the Act of March 3, 1879.

The Guard Rail for today's traffic— *and tomorrow's*





This installation of the Hook-Flange Guard Rail on a prominent eastern railroad provides for a canted running rail.

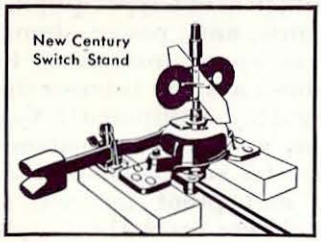
STRENGTH and resilience are the twin keys to the construction of guard rails or other track accessories that will bear up under the shocks resulting from fast operation of heavy trains. However strong a guard rail may be, unless it is resilient the repeated impacts of wheels may break it.

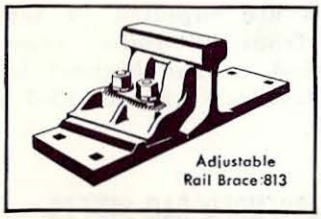
The Bethlehem Hook-Flange Guard Rail is made of rolled steel. With great strength it combines a high degree of resilience. When struck on the flare by the flange of a fast-moving wheel, this guard rail gives slightly, absorbing and dissipating the shock. The truck is straightened up smoothly, without damage to flanges or guard rail. The opposite wheels are guided accurately past the frog point.

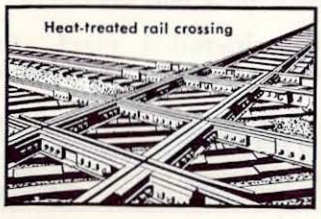
The present trend towards higher speeds for conventional equipment and super speeds with trains of new designs calls for these safe, durable Bethlehem Hook-Flange Guard Rails. For all practical purposes they can be considered unbreakable. The strength of the rolled steel enables it to stand extremely heavy stresses, while its resilience cushions the impacts.

Like the Hook-Flange Guard Rail, all other items of Bethlehem's line of Track Specialties are designed with careful consideration of operating conditions, based upon long contact with the railway field, and have proved their worth by years of service on representative roads.

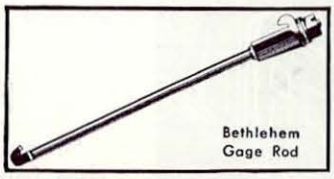
OTHER BETHLEHEM TRACK EQUIPMENT

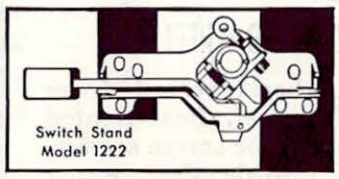


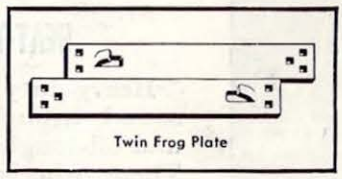




BETHLEHEM *Track Equipment*







BETHLEHEM STEEL COMPANY

GENERAL OFFICES: BETHLEHEM, PA. *District Offices:* Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Houston, Indianapolis, Kansas City, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, St. Paul, Washington, Wilkes-Barre, York. *Pacific Coast Distributor:* Pacific Coast Steel Corp., San Francisco, Seattle, Los Angeles, Portland, Honolulu. *Export Distributor:* Bethlehem Steel Export Corp., New York.

HERE'S *All Year* INFORMATION

★ ON ARMCO IRON AND STEEL

★ PRODUCTS FOR RAILROADS

★ WHEELS • SHEETS • PLATES • STAINLESS STEEL

ONE-WEAR WHEELS

Armco One-Wear Wheels combine all the good qualities you demand from wheels for light equipment, such as tank, stock, refrigerator and box cars. Made from pre-tested steel of just the right analysis, these wheels are sound, tough, and exceptionally wear-resisting. You can depend on the same degree of hardness below the condemning limit as above, the same vital factor of safety through many miles of hard service. Be safe, be sure, be thrifty: build and replace with Armco One-Wear Wheels.

MULTIPLE-WEAR WHEELS

Armco Multiple-Wear Wheels have rolled up many enviable mileage records on leading American railroads. These safe, long-wearing wheels are made from sound, uniform steel—steel that has demonstrated its ability to absorb punishment under the fastest passenger trains and heaviest freight trains. Economical to use because there is more wear between turns. A product of the most advanced metallurgical science in wheel manufacture, each Armco Multiple-Wear Wheel is individually made and carefully inspected. Your wheel mileage is bound to go up when you put Armco Multiple-Wears under your cars and locomotives.

HEAT-TREATED WHEELS

Heavy-duty wheels rolled from sound wrought steel, heat-treated and oil-toughened for severe service. These wheels provide the utmost safety, mileage and freedom from trouble. Noted for their ability to withstand punishment and preferred by many railroads because they keep payloads moving. Armco Heat-Treated Wheels are a product of scientific knowledge and long experience in wheel-making. The lessons learned in twenty-seven years of wheel-making are reflected in their safe, dependable performance and economy for railroads large and small. Especially recommended for engine truck and tender service.

ARMCO STAINLESS STEELS

Bright, modern and rust-proof Armco Stainless Steels are gaining rapid acceptance for cars, both in exterior and interior uses. These finely finished metals possess an excellent strength/weight ratio and are extremely corrosion-resistant. Cars designed to take full advantage of the physical properties of Armco Stainless Steels weigh about two-thirds as much as old-type equipment. Maintenance and power demands decrease as speed increases. Fully as important are the interior applications—galley equipment, furniture, trim, and other construction that must be smart-looking, easy-cleaning, and proof against rust. Armco Stainless Steel sheets, plates and strip are supplied in various finishes, from hot-rolled annealed and pickled to the highest lustre polish. Grades: Armco 18-8 and Armco 17.

PASSENGER CAR SHEETS

Smooth cold-rolled steel sheets that fabricate readily, weld soundly,

REDUCE BUILDING AND REBUILDING COSTS

and finish smoothly. The excellent paint-holding qualities of this grade reduce upkeep and keep cars looking their best. The ideal sheet to use where appearance, low-cost fabrication and upkeep count heavily.

CAR SIDING SHEETS

The performance-proved grade for side sheets, roof sheets, pier panels, letter-boards and interior work. Consistently flat with smooth, close-grained, paint-holding surface. Uniformity insures easier fabrication and flawless finish. Armco Car-Siding Sheets work easily, finish neatly, and not only speed welding but fuse strongly and durably. Supplied in all commercial sizes and gages.

FREIGHT CAR SHEETS

Manufactured in three grades of sheets and plates—rust-resisting Armco INGOT IRON, Copper-Bearing Steel, and Plain Steel. All grades form readily, weld firmly, and hold paint. Appreciable savings in fabrication as well as long, trouble-free service. Armco Freight Cars Sheets and Plates require shopping less frequently and thus contribute directly to greater earnings.

JACKET SHEETS

Armco Jacket Sheets present a highly-finished surface with excellent flatness. The most widely-used grade is cold-rolled, stretcher leveled and resquared, and insures a very attractive appearance when neatly formed and smoothly finished. These sheets are soft and workable and hold paint well. Armco Extra Smooth Jacket Sheets are recommended where appearance is not so important. They work easily and take paint well.

GALVANIZED SHEETS

An Armco grade for every railroad requirement: INGOT IRON, Copper-Bearing Steel and Plain Steel. INGOT IRON is especially recommended where service conditions are severe. All three grades have a full-weight, adherent galvanized coating, are soft and easy-working, and render a full measure of service. All commercial sizes and gages, in flat or corrugated galvanized sheets.

HOT ROLLED SHEETS

Armco Hot-Rolled Sheets may be specified in either INGOT IRON, Copper-Bearing Steel or Plain Steel. All grades are ductile and weldable. These sheets are rolled on the Armco-invented continuous mills and have the clean, smooth surface characteristic of sheets made by this improved process. Also Armco Hot-Rolled Annealed Sheets in 17 gage and lighter, suitable for simple forming operations where surface appearance is not important. Armco Hot-Rolled Iron and steel are also available in strip, both coils and cut lengths. Clean, smooth surface and good working qualities. Widths under 24 inches.

COLD ROLLED SHEETS

This is another of the sheet products that Armco pioneered 30 years ago, and has since perfected to a notable degree. The analysis, temper and surface of these sheets are carefully adapted to individual requirements, while unusually close control is exercised in processing, from open hearth to finishing mills. Surface is uniformly dense, and this grade is generally found suitable for the most exacting surface requirements. Widest range of sizes. Also Armco Cold-Rolled Strip with similarly good qualities in widths under 24 inches, coils or cut lengths.

ARMCO

ARMCO RAILROAD SALES CO.

Subsidiary of The American Rolling Mill Company

Executive Offices: Middletown, Ohio

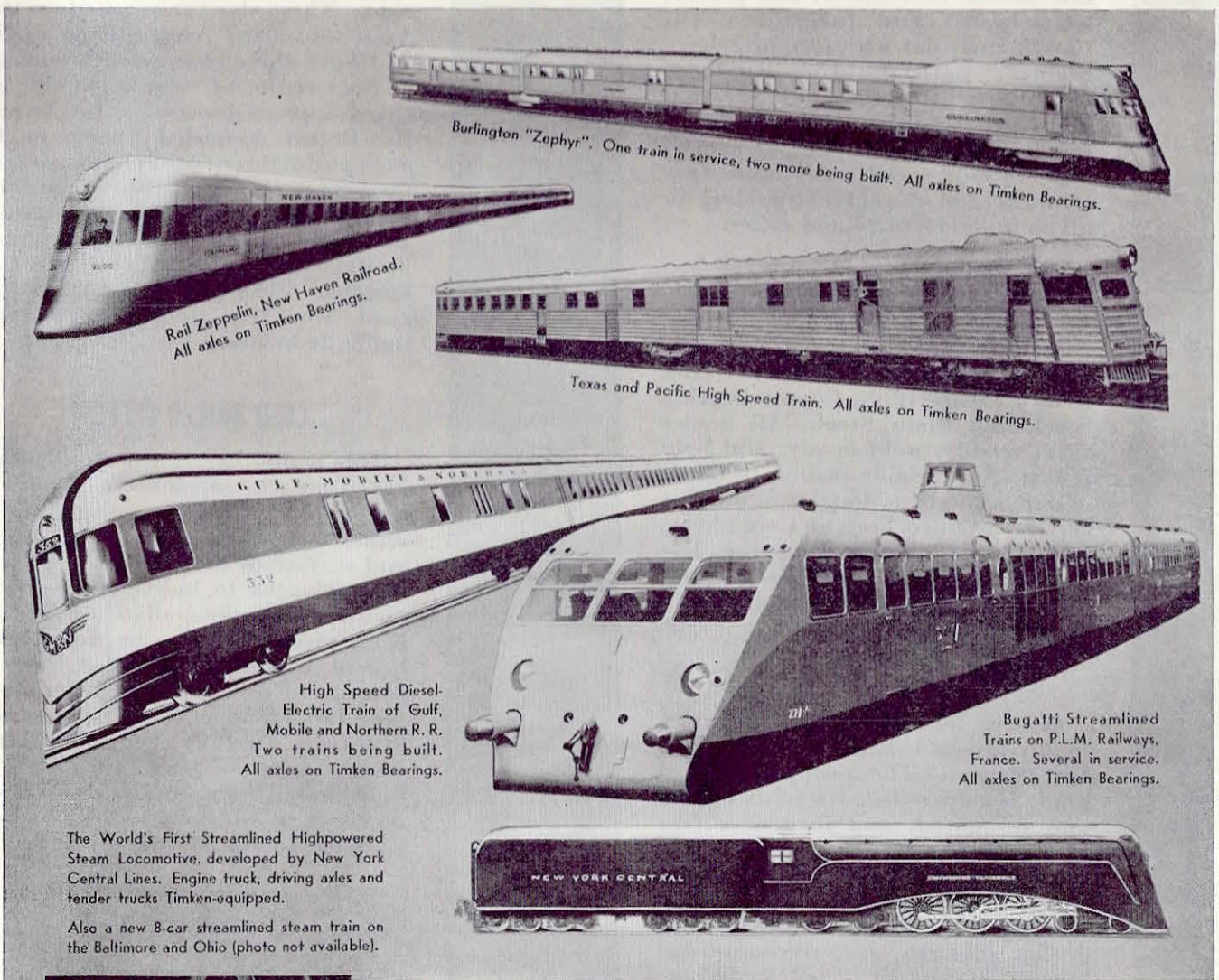
DISTRICT OFFICES: Chicago, Cleveland
New York St. Louis
Philadelphia San Francisco

THE ARMCO INTERNATIONAL CORP. Middletown, Ohio

WITH ARMCO IRON AND STEEL PRODUCTS

TIMKEN BEARINGS

Predominate in Modern Streamlined Trains and Locomotives



Burlington "Zephyr". One train in service, two more being built. All axles on Timken Bearings.

Rail Zeppelin, New Haven Railroad. All axles on Timken Bearings.

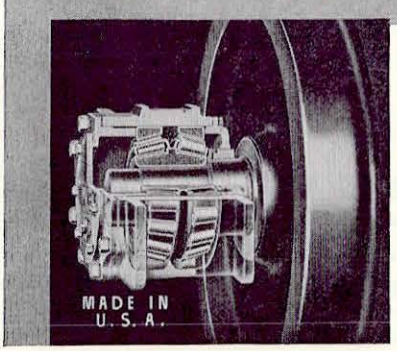
Texas and Pacific High Speed Train. All axles on Timken Bearings.

High Speed Diesel-Electric Train of Gulf, Mobile and Northern R. R. Two trains being built. All axles on Timken Bearings.

Bugatti Streamlined Trains on P.L.M. Railways, France. Several in service. All axles on Timken Bearings.

The World's First Streamlined Highpowered Steam Locomotive, developed by New York Central Lines. Engine truck, driving axles and tender trucks Timken-equipped.

Also a new 8-car streamlined steam train on the Baltimore and Ohio (photo not available).

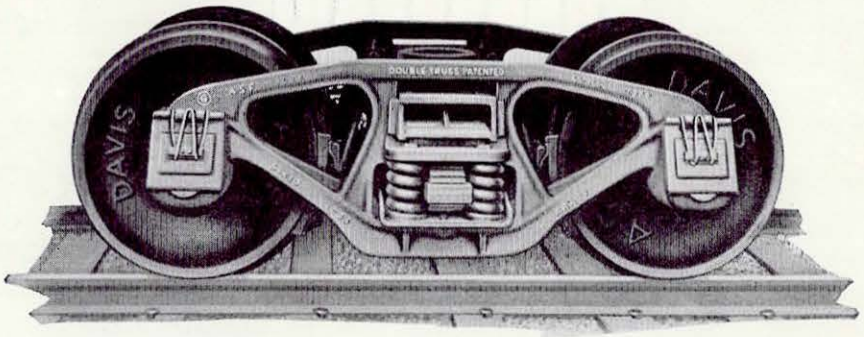


More Timken Bearings are used on the axles of modern streamlined trains and locomotives than all other types of bearings combined. Timken Bearings were selected for this modern equipment on the basis of their outstanding performance in all types of rolling stock on 162 railroads. It was not only a question of friction elimination, but also of dependability and economy. The first long-distance trains ever placed on roller bearings were Timken-equipped. So was the world's first completely anti-frictionized locomotive. You need this product of American engineering genius and manufacturing skill in your trains and locomotives. Specify Timken-equipped.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN TAPERED ROLLER BEARINGS

Prosperity of the railroads essential to the prosperity of the durable goods industry and the thousands of workmen who depend upon them for their well-being



Improved Double Truss Truck
With Improved Riding Coil Elliptic Spring Group

A RAILROAD problem of first magnitude is the need for rehabilitation and rebuilding of plant and equipment. The railroads require modern, more efficient cars and locomotives to improve their competitive position and to lower operating costs.

The modernization of existing freight cars by the substitution of cast steel trucks for the antiquated arch bar truck will go far toward the elimination of costly train delays, reduce maintenance expenses and contribute to the more economical handling of trains.

These results justify a capital expenditure program to bring about required modernization.

The savings that would be realized in operating and maintenance costs by the modernization of existing equipment and by the purchase of new cars and locomotives will, in a comparatively short period, finance the expense of rebuilding or purchasing new units.

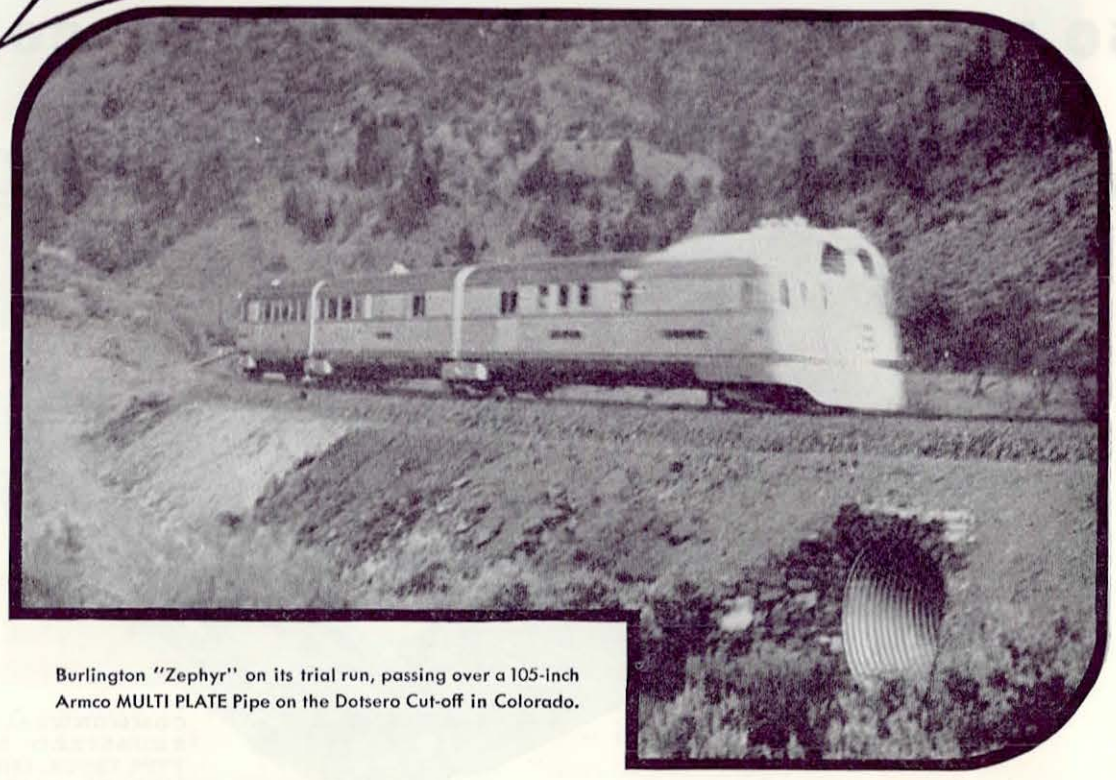
To bring about these desirable conditions on the American railroads, requires relief from restrictive regulations and uniformity of supervision for all modes of transportation.

Restoration of railways to normal purchasing power and freedom from obstructing regulations, would immediately afford employment for thousands of men in the plants of the durable goods industry and release thousands of tons of freight from every part of the country.

AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS

AS MODERN AS THE "Zephyr"



Burlington "Zephyr" on its trial run, passing over a 105-inch Armco MULTI PLATE Pipe on the Dotsero Cut-off in Colorado.

MODERN in every respect is the Burlington's outstanding train—the "Zephyr." But none the less modern is this portion of the roadbed on the new Dotsero Cut-off in Colorado—with a drainage installation of Armco MULTI PLATE Pipe.

This up-to-date drainage structure, (available also in arch form), was delivered to the job "knocked down," where it was quickly assembled by the contractor—entirely eliminating delay to construction operations. The thick iron plates are deeply corrugated, thus giving adequate strength for the heaviest of loads. And being made of rust-resisting Armco Ingot Iron, they will last for many decades. Should traffic conditions require extending or salvaging the pipe, either can readily be done at reasonable cost.

Ask the Armco engineer about it, or write for complete descriptive data on this modern drainage product.

INGOT IRON RAILWAY PRODUCTS COMPANY

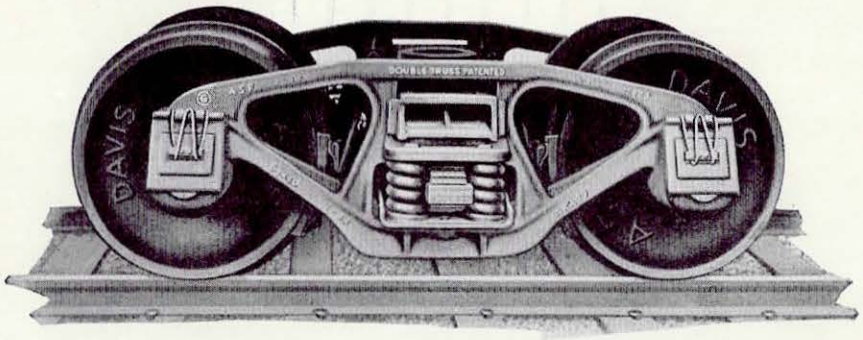
Middletown, Ohio • Berkeley, Calif.
(Member of the Armco Culvert Mfrs. Assn)
Philadelphia St. Louis Salt Lake City Los Angeles Minneapolis Houston
Portland Atlanta Denver Chicago Dallas El Paso Spokane

MULTI ARMCO PLATE

ARMCO MULTI PLATE

★ FOR MODERN ROADS ★

Prosperity of the railroads essential to the prosperity of the durable goods industry and the thousands of workmen who depend upon them for their well-being



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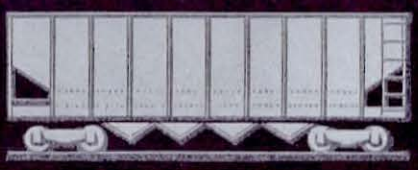
AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS



THE HOPPER CAR IS A NATURAL FOR ALUMINUM

There are two sound economic reasons

To their everlasting credit, railroad men were the first to point out the economic inconsistency of hauling freight in cars that weigh no less than a third of their maximum revenue-load capacity.

It was railroad men looking at recurring maintenance costs, bad-order statistics, and similar tell-tale indices, who first realized that something pretty fundamental had to be done about this business of corrosion, which is such a drain on operating revenue.

Every railroad operator knows that corrosion is a disease that he cannot cure with ointments, unless he wants to run his railroad indoors, and then he would still have sulphur to contend with!

Every railroad operator knows that it costs just as much to haul a ton of tare as a ton of load, and that he actually hauls the tare farther than he does the load!

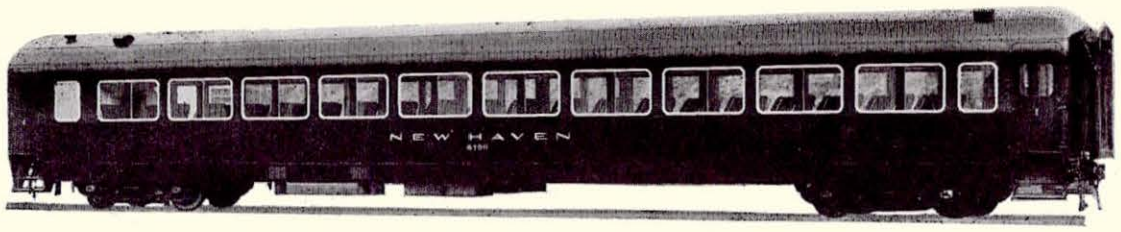
Nothing that we can do or say can add one iota to the clear understanding that freight cars must be lighter and that they must last longer. But it does happen that nature peculiarly endowed Aluminum with a combination of requirements that offer a solution to the problem.

Starting with these inherent characteristics: lightness and resistance to corrosion, we in Aluminum Company of America have been working for nearly fifty years to prepare Aluminum for this job. The alloys and the "know-how" are ready and proved. We know we can help, and we want to. Aluminum Company of America, 1878 Gulf Building, Pittsburgh, Pa.

ALCOA

ALCOA ALUMINUM

New York New Haven and Hartford Railroad

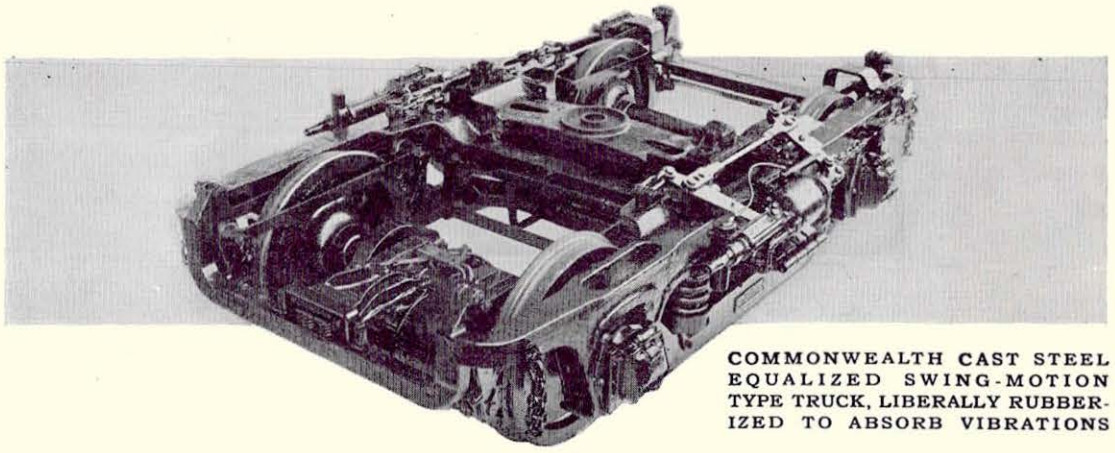


ONE OF FIFTY LIGHT-WEIGHT DELUXE COACHES BUILT BY PULLMAN-BRADLEY CAR CORPORATION, WORCESTER, MASS.

50 NEW LIGHT-WEIGHT DE LUXE COACHES

WITH COMMONWEALTH TRUCKS

STRENGTH AND RIDING COMFORT



COMMONWEALTH CAST STEEL EQUALIZED SWING-MOTION TYPE TRUCK, LIBERALLY RUBBERIZED TO ABSORB VIBRATIONS

SAFETY AND SMOOTH RIDING AT HIGH SPEEDS

•

GREATEST STRENGTH WITH LEAST WEIGHT

•

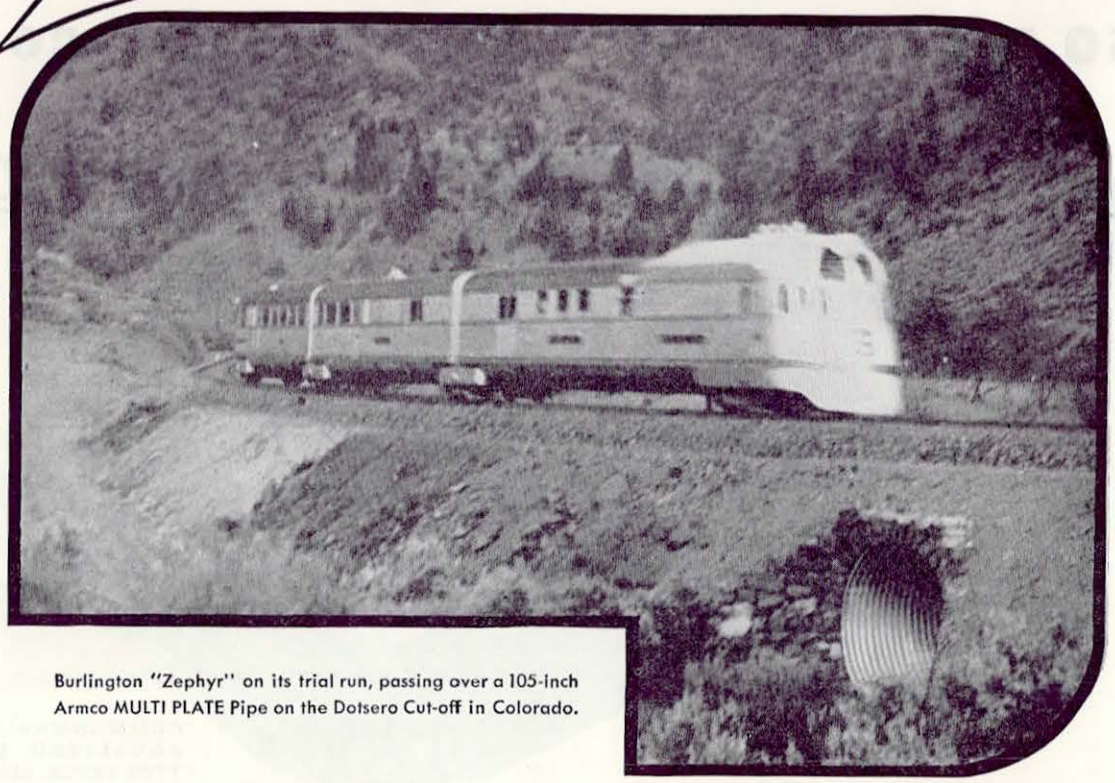
LOWEST MAINTENANCE COSTS

GENERAL STEEL CASTINGS CORPORATION

COMMONWEALTH PRODUCTS

EDDYSTONE, PA. GRANITE CITY, ILL.

AS MODERN AS THE "Zephyr"



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INGOT IRON RAILWAY PRODUCTS COMPANY

Middletown, Ohio • Berkeley, Calif.

(Member of the Armco Culvert Mfrs. Assn.)

Philadelphia St. Louis Salt Lake City Los Angeles Minneapolis Houston
Portland Atlanta Denver Chicago Dallas El Paso Spokane

MULTI ARMCO PLATE

ARMCO MULTI PLATE

★ FOR MODERN ROADS ★

COMPLETE WATER TREATMENT SERVICE

Dearborn
TRADE MARK REGISTERED

COMPLETE laboratory and field service combine in making the Dearborn Scientific Case Method consistently successful and economical. The Dearborn Water Treating Service survey makes possible correct recommendation of the properly balanced treatment.

Take advantage of the service and treatment methods backed by Dearborn's modern research laboratories and years of experience in the field of water treatment.

Consultation is invited

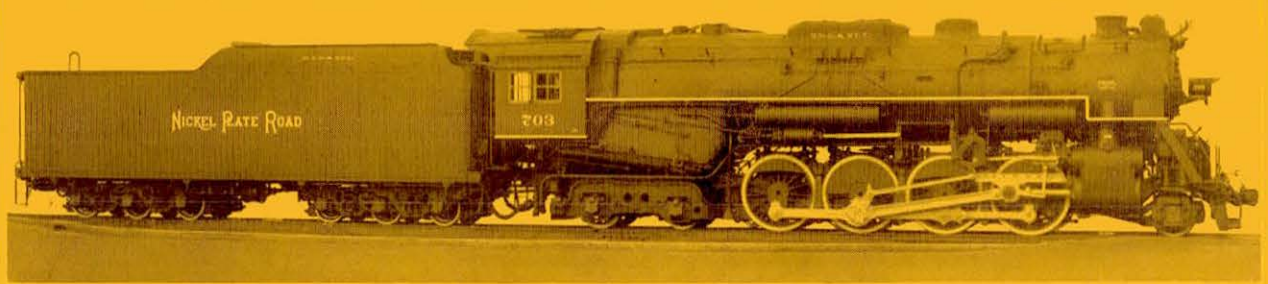
DEARBORN CHEMICAL COMPANY
310 S. MICHIGAN AVENUE CHICAGO
205 EAST 42nd STREET NEW YORK
CANADIAN OFFICE and FACTORY, TORONTO

83%

247 of the 298 "Super Power" 2-8-4 Type Fast Freight Locomotives Built to Date are equipped with

Nicholson Thermic

SYPHONS



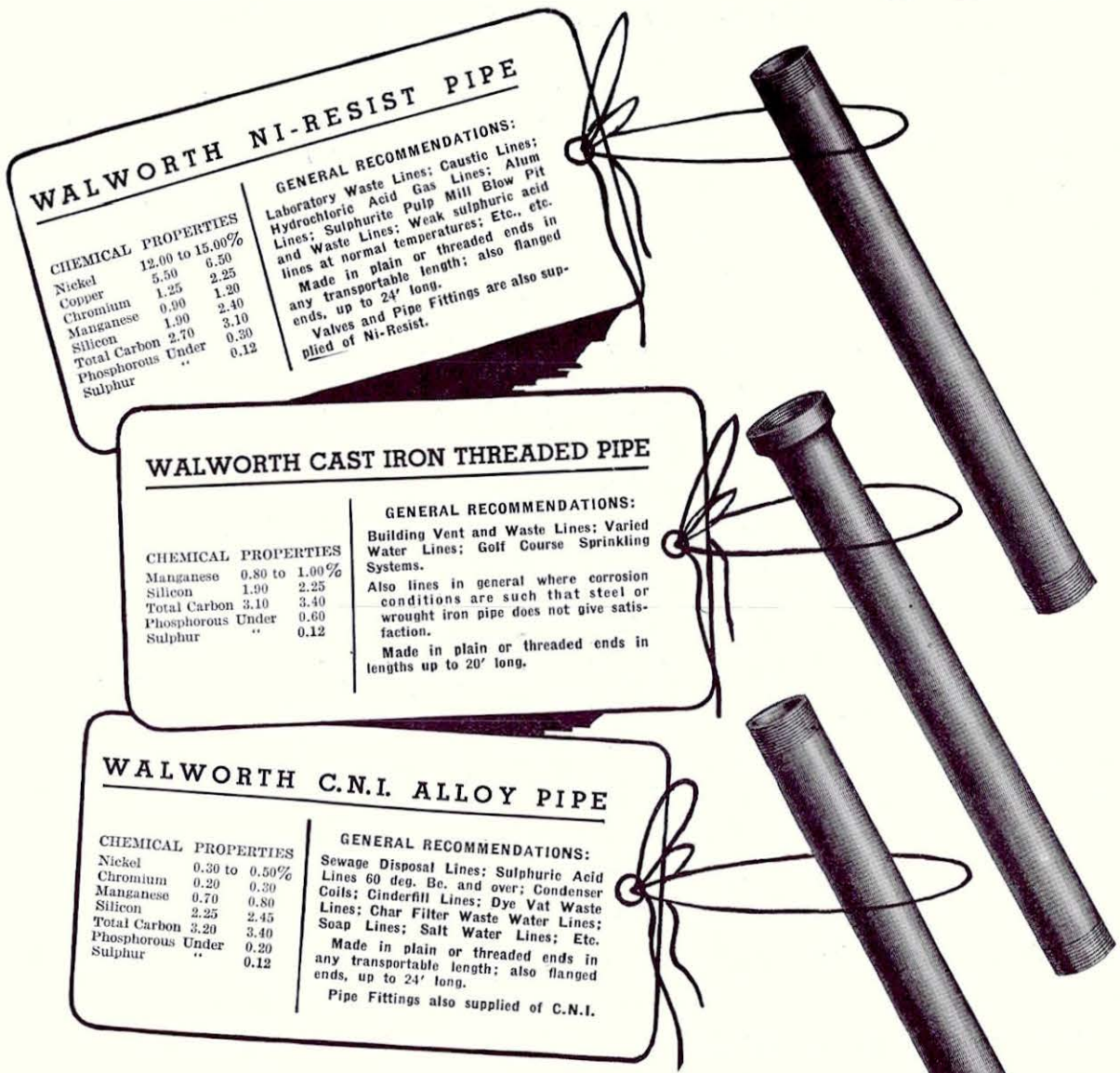
The figures above include the 15 Locomotives recently delivered to the New York, Chicago & St. Louis R. R. Co.

Increased Heating Surface
Increased Circulation
Improved Performance
Reduced Maintenance
Fuel Economy
Safety in Case of Low Water

LOCOMOTIVE FIREBOX COMPANY
NEW YORK CHICAGO MONTREAL

REDUCE MAINTENANCE COST

with these 3 Walworth pipes


WALWORTH NI-RESIST PIPE
CHEMICAL PROPERTIES
Nickel 12.00 to 15.00%
Copper 5.50 6.50
Chromium 1.25 2.25
Manganese 0.90 1.20
Silicon 1.90 2.40
Total Carbon 2.70 3.10
Phosphorous Under 0.30
Sulphur " 0.12
GENERAL RECOMMENDATIONS:
Laboratory Waste Lines; Caustic Lines; Hydrochloric Acid Gas Lines; Alum Lines; Sulphurite Pulp Mill Blow Pit and Waste Lines; Weak sulphuric acid lines at normal temperatures; Etc., etc.
Made in plain or threaded ends in any transportable length; also flanged ends, up to 24' long.
Valves and Pipe Fittings are also supplied of Ni-Resist.
WALWORTH CAST IRON THREADED PIPE
CHEMICAL PROPERTIES
Manganese 0.80 to 1.00%
Silicon 1.90 2.25
Total Carbon 3.10 3.40
Phosphorous Under 0.60
Sulphur " 0.12
GENERAL RECOMMENDATIONS:
Building Vent and Waste Lines; Varied Water Lines; Golf Course Sprinkling Systems.
Also lines in general where corrosion conditions are such that steel or wrought iron pipe does not give satisfaction.
Made in plain or threaded ends in lengths up to 20' long.
WALWORTH C.N.I. ALLOY PIPE
CHEMICAL PROPERTIES
Nickel 0.30 to 0.50%
Chromium 0.20 0.30
Manganese 0.70 0.80
Silicon 2.25 2.45
Total Carbon 3.20 3.40
Phosphorous Under 0.20
Sulphur " 0.12
GENERAL RECOMMENDATIONS:
Sewage Disposal Lines; Sulphuric Acid Lines 60 deg. Be. and over; Condenser Coils; Cinderfill Lines; Dye Vat Waste Lines; Char Filter Waste Water Lines; Soap Lines; Salt Water Lines; Etc.
Made in plain or threaded ends in any transportable length; also flanged ends, up to 24' long.
Pipe Fittings also supplied of C.N.I.

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Bear in mind that these pipes can be readily cut and threaded with standard pipe thread by ordinary hand or power tools. They are available in sizes 1¼" to 8" inclusive with the wall thickness and outside dimensions of extra heavy steel pipe. These pipes can be supplied either with female thread (bell end) one end, other end male thread or male thread both ends. Also supplied with ends as specified above.

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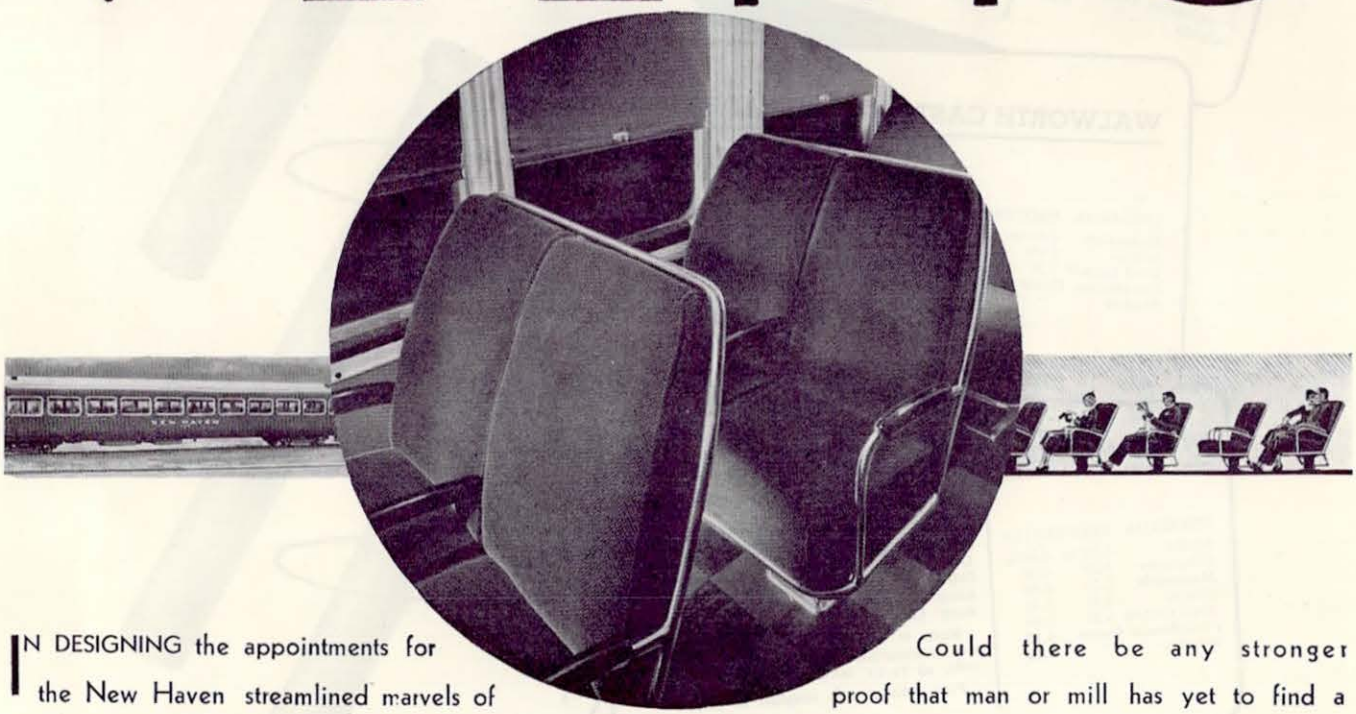

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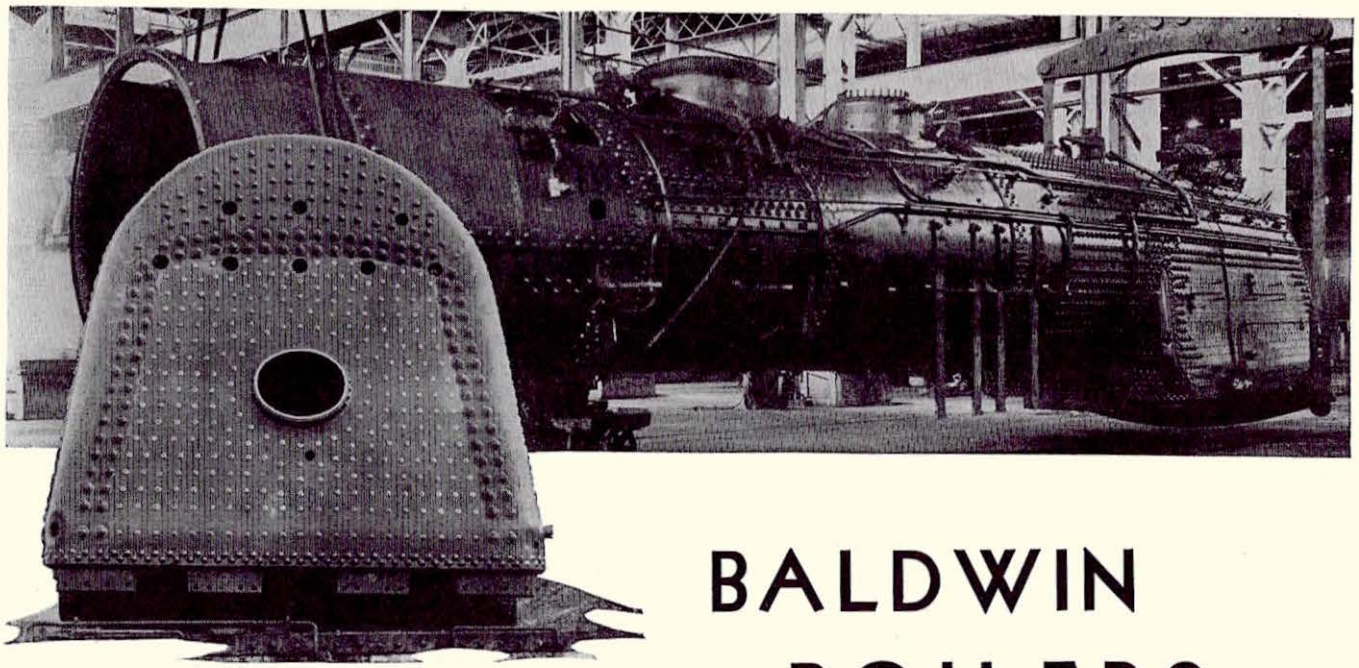

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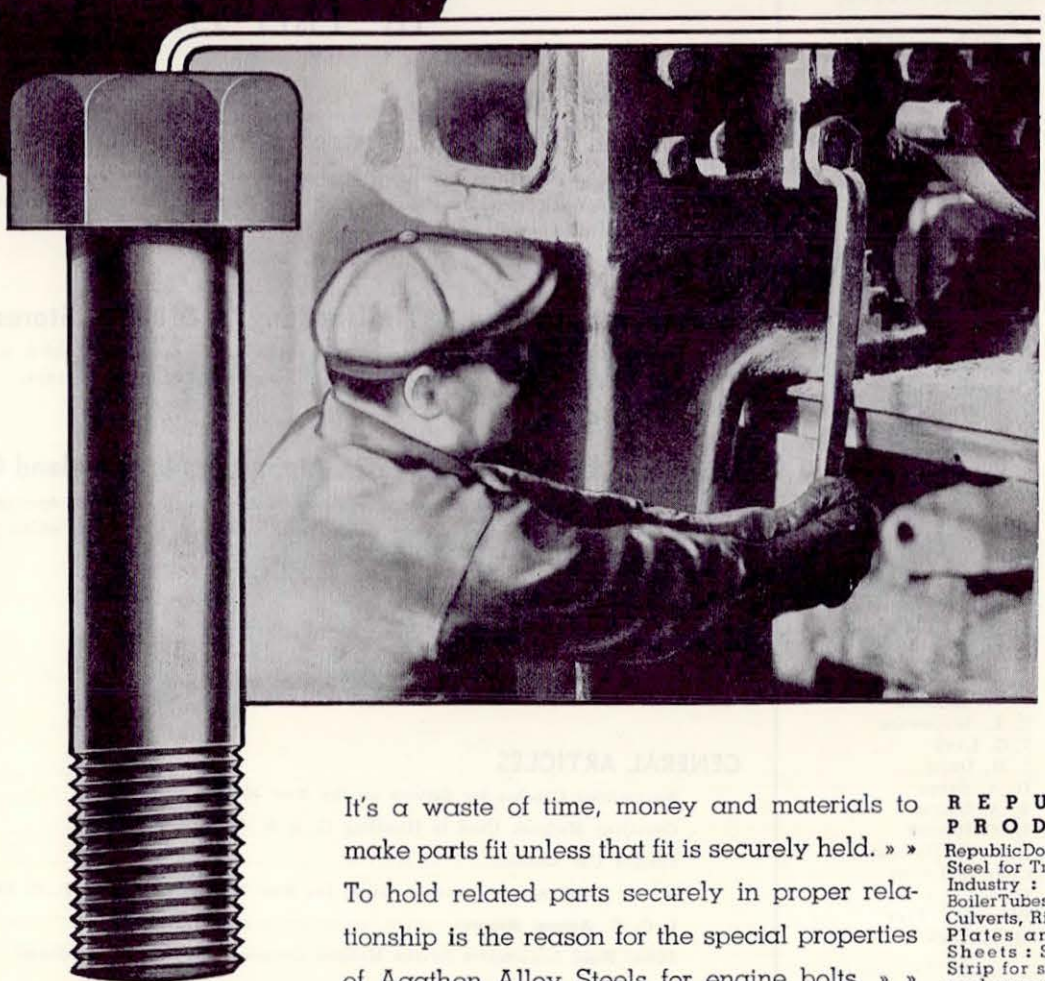
PARTS *made to fit* MUST BE HELD SECURELY



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RAILWAY AGE

The Railways — The Outlook for 1935

Barring the unforeseen, 1935 ought to be one of the most eventful years in the history of the American railways. Last year closed with traffic on the upgrade, which is always a happy augury for at least the opening months of the year to come. The upward trend which began in November was so marked that during the closing weeks of the year car loadings were relatively the largest since they began to decline last March. The railways' difficulties have been studied and discussed for several years without any concrete action having been taken to deal with any of them. Now, however, it would appear that there is going to be some action. During 1934 opposition to the regulation of interstate motor carriers dwindled almost to zero, while influential supporters of such regulation increased steadily in numbers and zeal. Enaction by Congress of legislation establishing regulation of highway carriers, therefore, ought to come speedily, despite the opposition of a few "bitter enders" led, not by those who provide highway transportation, but by the manufacturers of commercial motor vehicles.

Equalizing Competitive Opportunity

Similarly also, the regulation of water carriers and the modification or repeal of the long-and-short-haul clause of the interstate commerce act ought also to be adopted by Congress—unless the opposition of a few selfish intransigents carries more weight with that body than the unanimous voice of all disinterested students. These three measures—Highway and water carrier regulation and fourth section (long-and-short-haul) modification—will greatly alleviate the railways' difficulties; they will not cure them all.

Indeed, these measures—so promising of increased railway employment and purchases from the durable goods industries—would be more than offset if legislation proposed by the railway labor organizations were enacted. These measures include provisions for the six-hour day, the so-called "full" crew, and for limiting train lengths to an uneconomic maximum. Purported to be in the interest of railway labor, these proposals would accomplish the ruin of the railway industry by increasing operating expenses by $600,000,000 annually, and would result in the wholesale curtailment of services, with a consequent decrease in employment. The railroads are operating today many trains which are barely paying expenses under the eight-hour day and with present crews. The application of the six-hour day and the addition of one or more unneeded employees to such trains would make their discontinuance unavoidable, with consequent loss of jobs for the entire train crew. The short-sighted proponents of this legislation have yet to learn the lesson set forth so cogently by Professor Sidney Miller in his work on Inland Transportation wherein he says:

> In the face of price competition that grows increasingly keen it appears that, until rival agencies are burdened with total service costs and certain other restrictions are imposed in the interest of public safety and social policy, railway workers must choose between a small volume of employment at high wage rates and a greater volume at lesser rates.

"Labor" Bills Would Reduce Employment

If the railway industry is to regain its normal capacity for providing jobs and a market for the products of industry, then it is just as essential that measures designed to increase operating expenses be defeated as it is that those bringing their competitors under regulation be enacted. There can be no disagreement upon this question by any social-minded person who knows the facts.

The first hurdle ahead of the railways, then, is a legislative one, which, if surmounted, will protect them from grossly unjust competition on the one hand and, on the other, from a brazen raid upon their depleted treasuries. Unless they succeed in negotiating this first barrier, there is small hope that any other steps open to them can prevent general collapse. If the weight of disinterested and informed public opinion still means anything, this obstacle should be overcome, giving the carriers at least a fighting chance to regain a measure

of their capacity as employers of labor and purchasers of the products of industry.

This much the railways have a right to expect in 1935 as the very minimum. But the year should hold much more for them than that. There is a need—with little or no controversy about it—for modification of the bankruptcy law to facilitate railway reorganizations. There should be no question about the enactment of this legislation, so that 1935 may see the financial structures of a number of weak or bankrupt carriers remodeled and strengthened. The labor provisions of the Emergency Transportation Act of 1933 likewise must be changed, so that labor may be displaced or transferred in the interest of co-operative economies—with reasonable indemnification against hardship.

Vast Field for Co-operative Economies

The modification of this provision will open the door to large savings which the railways should prepare to institute as soon as they are permitted to do so. The efficiency of the railways has been greatly increased since the end of federal control, but most of the improvement has been effected by the companies acting individually. Co-operative economies, i.e., those brought about by two or more companies joining together to pool their train services, their shops and terminals and to eliminate unnecessary duplications, offer a virgin field with great opportunities. Savings from this source—passed on to railway labor in greater employment, to patrons in a low level of rates, to security owners to revive their desire to provide the railways with needed capital, and to the durable goods industries for equipment and materials—would provide a tremendous stimulus to national recovery.

In examining the field of co-operative economies, the railroads will, of course, not overlook the two important proposals already made by Co-ordinator Eastman for the pooling of freight cars and the reorganization of l.c.l. freight service. Perhaps the specific plans favored by the Co-ordinator are not ideal—yet they are proposed as remedies for two phases of railway performance wherein great room for improvement is generally recognized. If Mr. Eastman's plans are not acceptable, then better ones must be developed which will be. The railways have had a practical demonstration of the public's enthusiasm for revolutionary designs of equipment to improve railway service. Is it not likely that similarly revolutionary improvements in methods would bring similar—if less intense—acclaim? It is still a fact (we do not speak irreverently) that the Lord helps those who do their level best to help themselves.

In 1935, therefore, we may hope for wise legislation in the interest of a fair opportunity for the railways to compete for traffic, and the equally wise defeat of legislation which would handicap them even worse than they are now. We may likewise expect to see progress in financial reorganization and in co-operative economies. Certainly, the improvement in passenger service by means of faster and more comfortable trains will continue unabated. There is a freight rate case soon to be decided, and an investigation into passenger fares soon to begin. The foregoing alone would make 1935 easily the most eventful year for the railways since the end of federal control. But that is by no means all that the year holds in prospect.

Should Co-ordinator's Office Be Continued?

There is to be decided, among other things, the question of continuing the office of Federal Co-ordinator of Transportation. Some of the functions which the Co-ordinator is supposed to exercise, but which have been inoperative because of the labor clause of the Emergency Transportation Act, should be carried on by the Association of American Railroads rather than by any regulatory officer. The railroads cannot expect to be accepted as final authorities on the subject of governmental relations with other forms of transportation, but if legislation favored by Co-ordinator Eastman is passed the Interstate Commerce Commission's regulatory authority will be extended over them, and it will become the determining authority. Until such time as the proper field of each agency is determined and generally accepted, however, it will be in the interest of the public, as well as of the various transportation agencies themselves, to leave the major research and recommendations of public policy in this field largely to a disinterested public authority.

Proposed extensions of waterways and highways should be considered in the light of the public convenience and necessity, and with relation to existing transportation plant, the same as proposed extensions of railways are now considered. The federal government needs to reformulate its policy toward transportation as a whole on a reasonable basis in the light of the general public interest, instead of having it directed as it is now by pork barrel lobbyists. Formulating such a policy is a large order, which cannot be filled unless a competent man is assigned to the task. The matter of subsidies to highway and water carriers and how to eliminate them; the equalization of wages in the transportation industry—these and other similar questions an officer such as the Co-ordinator can and should report upon in due course. Research into problems of a purely railway character and inter-railroad co-operation for operating economies, however, it would appear, are functions which might be left to the Association of American Railroads.

Crossing Elimination a Proper Public Function

That the separation of highway crossings with railways at grade is a proper public function, to be paid for entirely by public funds, ought also to be clearly established in 1935. The railways are not responsible for the growth in the volume and speed of highway traffic which has led to these crossings being the source of danger that they now are. Neither do the railways

effect any appreciable savings in operating expenses as a result of the elimination of grade crossings, which would justify them in making expenditures for that purpose. If, therefore, the operators of highway vehicles are not to pay for these improvements—and there is no indication that they are to be asked to do so—then the only just and feasible plan is to make grade separation a public enterprise. As a public works project grade separation is ideal in that there is a maximum of expenditure where the work is done; it can be speedily undertaken; and public money thus expended does not compete with private enterprise, as many public works have a tendency to do.

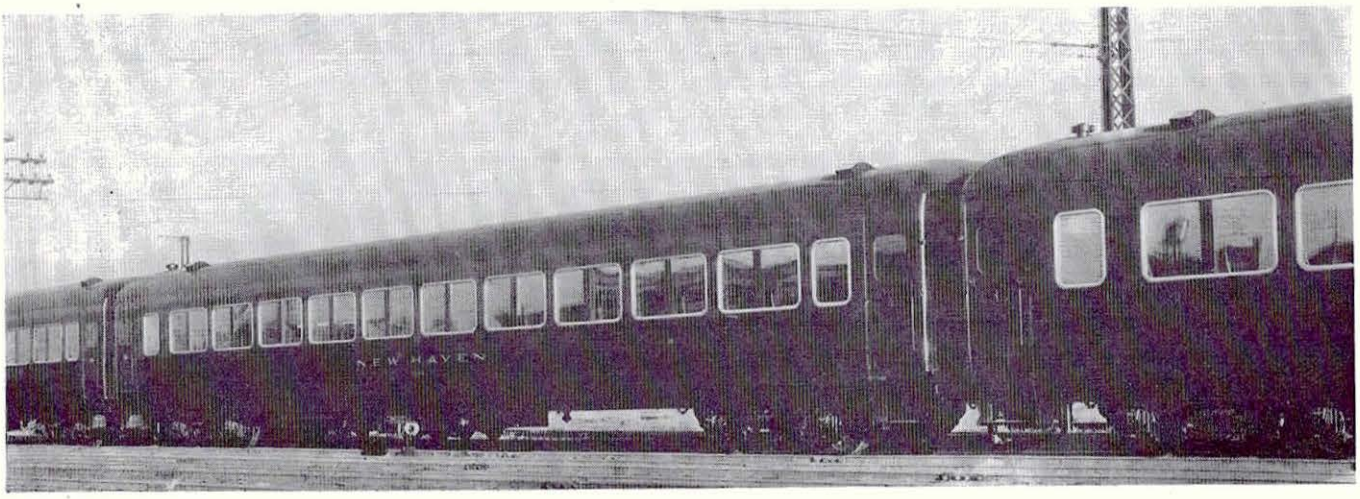
The rapid extension of store-door collection and delivery of freight, the spectacular improvements in service and equipment, the prospective changes in rates, the promise of regulation of railroad competitors and the co-ordination of their service with that of the rail carriers, the pooling of service and facilities and the abandonment of unremunerative lines, the financial difficulties to be met and overcome—all these indicate that 1935 will not be a year of somnolescence in the railroad business. If those connected with the industry will manifest an alertness in keeping with the necessities and opportunities of the situation, important history will be made.

Streamlined Coaches for Service on the New Haven

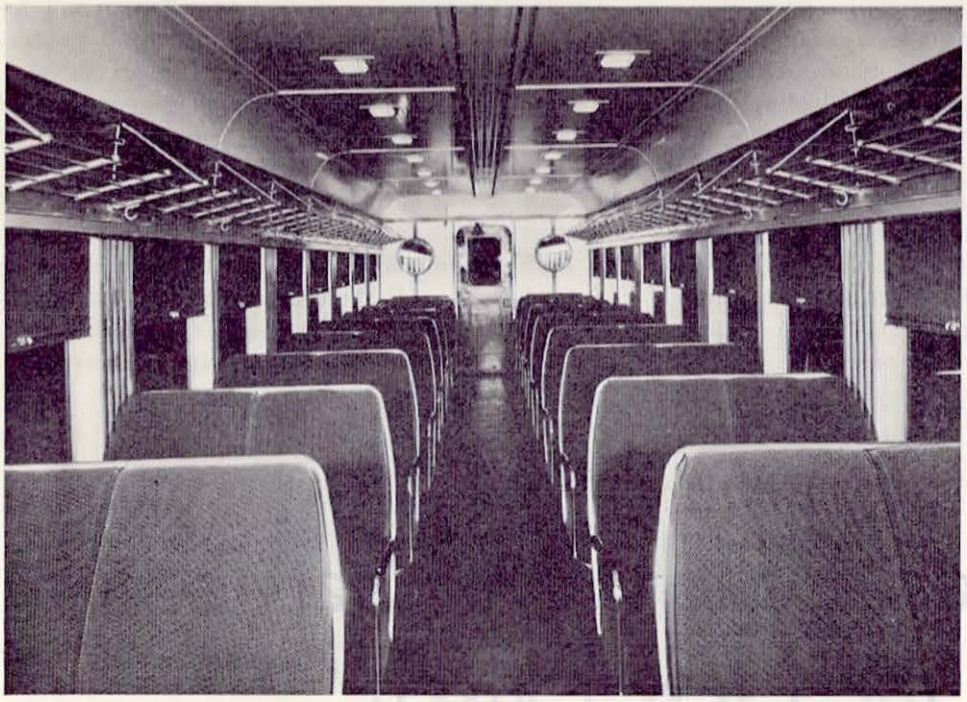
Approach to tubular cross-section and flush exterior surfaces produces car of pleasing exterior appearance—Air conditioning and unusual color scheme produce comfortable, attractive interior

FIFTY new, partially streamlined passenger coaches are now being placed in service by the New York, New Haven & Hartford which have been built to provide the maximum in comfort with an improved appearance brought about by a design which represents a pleasing transition from the conventional in railroad passenger equipment to the more radical designs which the future may bring. In an effort to produce the unusual the New Haven management enlisted the services of Walter Dorwin Teague, an outstanding industrial designer, who collaborated with the engineering staffs of the railroad company and the builders—the Pullman Bradley Car Corporation—in developing this design. Mr. Teague is responsible for the entire external and internal design of these cars, so far as appearance is concerned. The cars were built at Worcester, Mass.

Partial streamlining has been effected by an approach to a tubular cross-section and by making the exterior surface as smooth as possible. These are important factors in the streamlining of railway equipment since the lateral surfaces of trains are disproportionately large as compared to the front and rear ends, and most winds are quartering. No overhanging eaves or protruding belt rails are in evidence. Windows and doors are as nearly flush as possible and the roofs are of the turtle-back type. Along each side of the cars, below the side sills and between the steps, is a skirt extending down to 22 in. from the rail, thus carrying downward the inward curve of the sides and cover-



New Haven Streamlined Coaches



Interior of the New Haven Coaches, Showing the Ceiling-Light Louvres and the Central Air Duct

ing most of the sub-structure. This device not only improves air-flow, but also gives the coaches a lower and much cleaner appearance. This is similar to the practice of dropping the sides of automobile bodies which has contributed to the improved appearance of motor cars in the last two or three years. The exterior color scheme is hunter's green and silver.

Windows have been grouped in pairs and outlined in brush-finished aluminum molding with rounded corners, to emphasize the horizontal lines of speed. This adds greatly to the effect of simplicity and harmony in the design.

The coaches are 84 ft. 6¼ in. long over buffers, 13 ft. 4 in. from rail to top of roof, and 10 ft. ¼ in. wide overall. The seating capacity is 84 passengers and the seats, which are spaced 39½ in. apart, are so arranged that they may be revolved independently. Men's and women's saloons are located at the same end of the car. The weight is approximately 100,000 lb.

In the interior every effort has been made to insure the comfort of the passenger. The color scheme, higher keyed and gayer than is customary, has been made possible by complete air conditioning. Beginning with the tiles of rich blue on the floor, the side walls to the window sills are a deep blue-gray. Above the black Micarta window sills the side walls are full-finished aluminum up to the top of the frieze board. The ceiling is lacquered white. Three vermilion strips extending the full length of the car counteract any coldness which the color scheme might have. The seats have tubular frames and rest on an aluminum pedestal. They are upholstered in blue mohair of a small check pattern which is repeated in the window shades. Special care has been taken with the design of all the interior features, such as basket rack, curtain molding, saloon fixtures, etc. The circular mirrors at each end of the car relieve the usually uninteresting effect of these partitions.

Underframes Have Pressed Shapes

The center sills are constructed of two flanged channel pressings of Man-Ten steel applied one over the other and separated by the crossties which extend across the car in one piece. The top center sill is ¼ in. thick and the bottom sill $^{5}/_{16}$ in. thick. Eighteen pressed pan-shaped crossties spaced approximately 3 ft. apart are applied between the body bolsters. Pressed pan-shaped connections are applied at each crosstie to the two center-sill members. The bolsters are made up of pressed pan-shaped diaphragms having top and bottom cover plates. Pressed Man-Ten steel draft sills, $^{3}/_{16}$ in. thick, extend from the bolsters to the ends of the car. These are secured between the top and bottom center-sill members, as are also the $^{3}/_{16}$-in. pressed Man-Ten steel draft-sill extensions from the bolster to the first crosstie inside of the bolster. The side sills are a combined Z and channel-shaped pressing of $^{3}/_{32}$-in. Cor-Ten steel riveted to the ends of the crossties, cross-bearers and end sills. Three pressed Z-shaped floor stringers constructed of $^{1}/_{16}$-in. Cor-Ten steel extend the full length of the car each side of the center, in addition to which there is a $^{1}/_{16}$-in. Cor-Ten steel flanged channel floor stringer located under the seat pedestals. Beneath the floor stringers and applied directly to the top of the crossties, center sills and bolsters is a sub-floor of 20 gage Cor-Ten steel. Applied to the ends of the center sills is a cast-steel platform end casting in which are the buffer and draft-gear pockets.

The Superstructure

The side posts are constructed of Cor-Ten steel $^{3}/_{32}$ in. thick. They are of box section $^{3}/_{16}$ in. deep at their widest point. The bottoms of the side posts are curved in with a radius of 11 ft. 5 in., starting at a point 17½ in. above the bottom of the post. The tops of the posts are also curved inward with a radius of 2 ft. $5^{11}/_{16}$ in. Alternating posts are 10 in. wide and 4 in. wide, with flanges for attachment to the side plates. The belt rails are formed by two angle-shaped pressings. The horizontal flanges of the angles are coped out for the side posts and riveted together, forming a channel construction through which the side posts pass. The belt rails are further reinforced by means of a 3-in. by ¼-in. flat plate applied on the outside of the posts under the side sheets. The side plates are $^{3}/_{32}$-in. Cor-Ten steel pressed Z-shape. Side sheets of $^{3}/_{32}$-in. Cor-Ten steel extend from the bottom of the window openings to the bottom of the side sills, following the contour of the

side posts. The letter boards are also constructed of 3/32-in. Cor-Ten steel, extending from under the down-turned flange of the side plate to the top of the window opening following the contour of the side posts. Applied directly over the window opening is a longitudinal reinforcement constructed of a pressed channel and angle having the horizontal flanges coped out for the posts and applied in the same manner as the belt rail. Pressed angle connections are applied to each post and belt rail as well as to each post and longitudinal stiffener.

Roof and Floor Construction

The roofs are of turtle-back construction. Twenty-five 1/16-in. Cor-Ten steel pressed channel-shaped carlines with bottom flanges are used. Extending across the car below the carlines in the car body are pressed carline ties of 1/16-in. Cor-Ten steel. Roof sheets of 1/16 in. thickness and 8 ft. 4¼ in. wide are applied on the top of the car. Other roof sheets, 20 in. wide and 1/8 in. thick, extend from the lower edge of the center roof sheets to the top of the side sheets. There is a pressed channel purlin of 1/16-in. Cor-Ten steel located 19¾ in. each side of the center line of the roof, extending from end to end of the car body. Narrower purlins of the same material are also applied adjacent to the ends of the carline ties.

Applied over the longitudinal floor stringers is a steel floor having corrugations 3/8-in. deep extending across the car. Strips of cork 5/16-in. thick are cemented in the depressed portions of the steel floor plates on top of which is applied a continuous layer of cork ½ in. thick. The floor covering on 25 cars will consist of Linotile in 9-in. squares and in the other 25 cars, rubber tiles of the same size. Two shades of marbelized blue form a checkerboard pattern on the floor. Salamander, 1 in. thick, is applied on top of the sub-floor.

The Trucks

The cars are equipped with four-wheel trucks having 5-in. by 9-in. journals. The pedestals are cast integral with the truck frames. Forty of the cars have A.R.A. friction bearings and ten will have Fafnir roller bearings. The liberal use of Fabreeka pads has been made to absorb vibration and to eliminate rail noises. The brake cylinders are mounted on the truck frames with flexible hose connections in the brake-cylinder pipes. The generators are gear driven and are mounted in the trucks after the manner of traction motors. They are of 20-kw. capacity.

The Interior Finish

The inside finish from the under side of the window sills to the top of the stainless steel radiator guards is 3/16-in. Masonite covered with French gray lacquer. A 1/16-in. pressed-steel cove molding extends from the top of the floor to the bottom of the Masonite behind the heater pipes. The window sills are black Micarta over a wood base. The post covers are 1/16-in. steel with 2-in. flutes for their full height. The curtain molding extends from one end of the car to the other in one piece and is half oval shaped with a vertical flat surface 1½ in. wide. The frieze board from the top of the curtain molding to the horizontal portion of the ceiling is constructed of 1/16-in. steel formed to the contour of the top of the side posts and lower ends of the carlines.

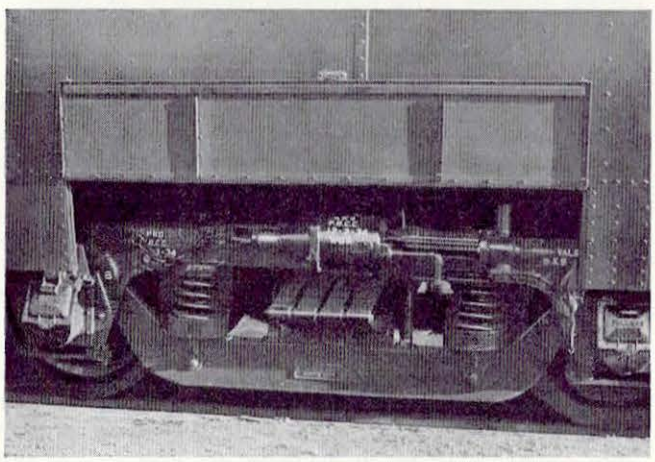
The horizontal ceiling finish is 3/16-in. Masonite extending each side of the air-duct exhaust molding to the frieze boards. From the top of the window sill to the top of the frieze board the interior of the car is covered with aluminum lacquer. The horizontal portion of the ceiling is lacquered white. Vermilion stripes extend along the sides of the car below the window sills, on the flat vertical portion of the curtain molding and between the two upper half-round moldings on the frieze boards. On each end of the cars are two 18-in. diameter beveled plate glass mirrors mounted in aluminum frames. The vermilion striping and half-round moldings extend across the ends of the car and down to the mirrors. The doors are French gray to match the finish below the window sills. Mirrors 18 in. in diameter are also located over the washstands in the saloons. There is also in each

The End Wall Is Decorated with a Circular Mirror and Striping

saloon a 24-in. by 6-in. aluminum shelf with a black composition top. Paper towel vendors and soap vendors are furnished in addition to the hoppers and toilet-paper holders.

Seat Arrangement and Design

The seats are constructed with a semi-gloss stainless steel tubular frame extending across the top and down the sides of the seat backs as well as around the bottom of the seat cushions. Welded directly to the seat frames are stainless-steel arm rests having rounded composition caps on the top. Two separate back cushions and seat cushions are applied to each seat. Each seat may be revolved independently of the others. In order to provide the necessary clearance the revolving mechanism is so arranged that when the seat turns it automatically tips up at the back, which remains elevated until the turning is completed, when it falls back to its normal position where it is firmly locked. The seat upholstery material is a dark blue checked pattern, Mohair plush, having approximately four squares each of loop and cut pile per



Skirt Panel Raised To Expose the Truck

inch. A stationary center arm rest divides the seats, with the exception of the bulkhead seats, which are narrower than the revolving seats.

Lighting

There is a light unit, containing a 25-watt lamp, for each seat in the car. Behind the lamp is an aluminum reflector and in front of it is a square louvre grille projecting slightly through the surface of the ceiling. The louvre allows for a sufficient distribution of the light and eliminates glare by protecting the passengers from a direct view of the light source. The portion of the grille below the ceiling line reflects a small amount of light laterally for illumination on the ceiling. No glass is used in the body fixtures.

Because of the water tanks and air-conditioning apparatus over the passageway and saloon ceilings a simple modern drop bowl type of lighting fixture was used at these places. All of the exposed metal parts of the fixtures are white, the same as the ceiling.

Basket Racks

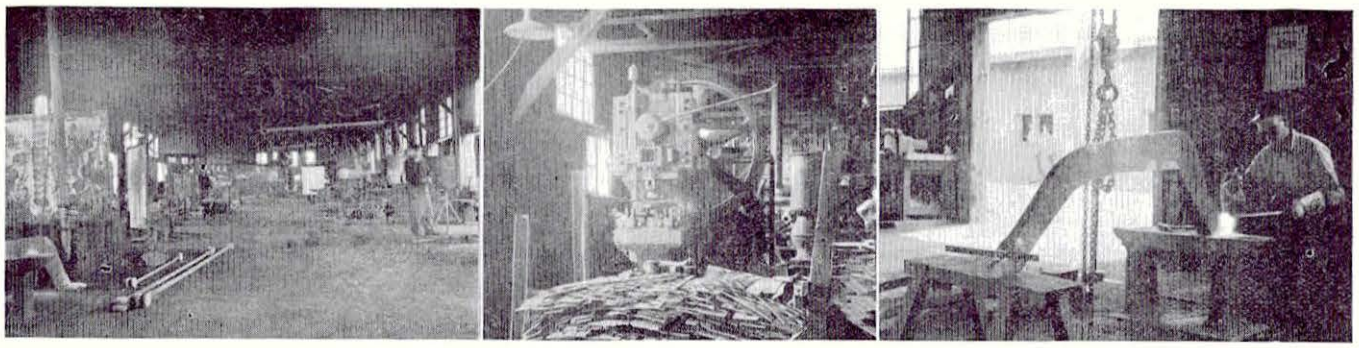
The basket racks are constructed of aluminum alloy to save weight. They are made up in sections 3 ft. 3½ in. long, so arranged that when applied to the cars the joints come at the supports, giving the appearance of continuous racks in one piece from end to end of the cars. Applied to each of the basket-rack supports is also a clothes hook. The bottom flange for attaching the basket rack to the car extends down behind the curtain molding which covers up the attaching screw heads. The foot on the tension member is covered by the half-round snap-on moldings used for decorative purposes. The basket racks are of sufficient strength to withstand safely far greater loads than is possible to place in them.

Air-Conditioning Apparatus

The air-conditioning apparatus operates electro-mechanically. Batteries of 500-amp. hr. capacity supply the condenser and blower fan motors as well as the lights. The condenser coils and motor are attached to the car underframe. The evaporator is located over the passageway ceiling. A center duct extending the full length of the car admits the conditioned air into the car. To obtain full benefit of the air-conditioning apparatus the cars are equipped with double glazed stationary window sash with dehydrated air between the panes as well as Salamander insulation throughout the car body.

Special Equipment on the New York, New Haven & Hartford Streamlined Coaches

Truck frame	General Steel Castings Corp.
Truck brake	American Steel Foundries, Clasp brake
Wheels	Carnegie Steel Co.
Axles	Carnegie Steel Co.
Truck bearings	40 cars—A.R.A. friction 10 cars—Fafnir Bearing Co.
Truck springs	Railway Steel Spring Co.
Journal-box lids	National Malleable & Steel Castings Co.
Axle generator	General Electric, 20 kw.
Rubber pads	Fabreeka Products Corp.
Draft gears	Waugh Equipment Co., P-24-K
Couplers	American Steel Foundries
Coupler yokes	American Steel Foundries, Quad. shear
Buffers	Waugh Equipment Co., H-27
Vestibule diaphragms	Pullman Bradley Car Corp.
Vestibule tail gates	Pullman Bradley Car Corp.
Step treads	Kass
Vestibule flooring	Alan Wood Steel Co., Diamondette
Body brake equipment	Westinghouse
Steam-heat equipment	Vapor Car Heating Co.
Steam train-line connections	Barco Mfg. Co.
Trap doors	Kass
Storage batteries	40 cars—Exide 5 cars—K-W 5-cars—Willard
Locking center pin	W. H. Miner
Saloon flooring	Tuco Products Corp., Flexolith
Insulation	Johns-Manville, Salamander
Window sills	Micarta, Westinghouse Elect. & Mfg. Co.
Window sash	Pullman Bradley Car Corp.
Saloon window glass	Pressed Prism Plate Glass Co.
Flooring	25 cars—Armstrong Linotile 25 cars—Hood rubber tile
Seats	Heywood-Wakefield Co.
Seat upholstery	20 cars—L. C. Chase 20 cars—Sidney Blumenthal 10 cars—Massachusetts Mohair Plush Co.
Window curtains	Pantasote Co.
Curtain fixtures	National Lock Washer Co.
Basket racks	Rostand Mfg. Co.
Lighting fixtures (car body)	Curtis Lighting, Inc.
Lighting fixtures (passageways and saloons)	Safety Car Heating & Lighting Co.
Body and saloon mirrors	Rostand Mfg. Co.
Saloon shelves	Adams & Westlake Co.
Saloon hoppers	Standard Sanitary Mfg. Co., Duner No. 7
Paper towel vendors	West Disinfecting Co.
Water cooler	Pullman Bradley Car Corp.
Drinking-cup vendor	United States Envelope Co., Ajax
Washstands	Standard Sanitary Mfg. Co.
Soap dispensers	West Disinfecting Co.
Toilet-paper holder	Morgan Envelope Co.
Exhaust ventilators	Pullman Bradley Car Corp.
Saloon ventilators	Pullman Bradley Car Corp.
Grilles	Tuttle & Bailey
Exterior lacquer	E. I. du Pont de Nemours
Interior lacquers	25 cars—E. I. du Pont de Nemours 25 cars—Murphy Varnish
Hardware	J. L. Howard Co.
Air-conditioning apparatus	General Electric Co. (Sturtevant)
Air-conditioning control panel	Vapor Car Heating Co.



In the Reclamation Shops of the General Store

Container Methods Used in Handling C. & N. W. Stores*

Ship 10 per cent of supplies in skids—Put scrap handling costs at 36 cents per ton

THE Chicago & North Western have neither eliminated, nor attempted to eliminate, yard switching or the two-wheeled warehouse truck in its stores operations, convinced that such facilities are desirable. Within recent years, however, there has been an extensive growth in the use of platform and highway equipment. Counting all points, the stores department operate 22 auto trucks, 4 tractors, 1 electric crane truck, 1 power lift truck, 12 hand lift trucks, approximately 300 trailers of various kinds for tractors and about 500 skids for lift trucks. The highway equipment is principally used in delivering supplies to the general offices, freight houses, storehouses and other points in the Chicago terminal where the main stores are located. Tractor equipment appears chiefly in moving materials to the shops and car yards and in performing transportation work for the car forces, as well as for moving shop sweepings and hauling scrap iron to the scrap dock. Lift trucks and skids are principally used around the storehouse and reclamation plant. Some materials, for example, journal brass, are received direct from manufacturers on skids, and it is estimated that 10 per cent of all materials that can be handled on skids are shipped in this manner from the general stores to outlying stores, which are equipped with hand lift truck.

* Continued from the issue of December 15, 1934.

Indicative of the extended use of mechanical equipment in the operations of the Chicago stores, as well as the variety of operations conducted by the stores, is the record of the equipment found in use at Chicago during a trip through the shop grounds. This record does not include the trailers or lift trucks under load or awaiting loads at different points of the yard.

9:05 a.m.—Tractor truck taking locomotive driving springs from blacksmith shop to storehouse for stock and shipment.

9:10 a.m.—Tractor truck taking complete piston from locomotive shop to tank shop for riveting.

9:15 a.m.—Same truck hauling brass bushings from foundry for shops.

9:25 a.m.—Electric truck hauling springs from west to east end of blacksmith shops.

9:30 a.m.—Highway truck loading material for general office, baggage room and for the electrical storekeeper at the passenger terminal.

9:30 a.m.—Highway truck loading material for coach yard and a suburban station.

9:30 a.m.—Electric lift truck taking brass from the storehouse to brass foundry.

9:40 a.m.—Tractor truck hauling cinders from power house to car shop.

9:45 a.m.—Tractor hauling sash from repair shop to paint shop.

9:45 a.m.—Tractor shifting trucks from car shop to coach shops.

Handling Railroad Scrap at the Main Scrap Dock

9:55 a.m.—Same tractor shifting cars at west end of repair shop.

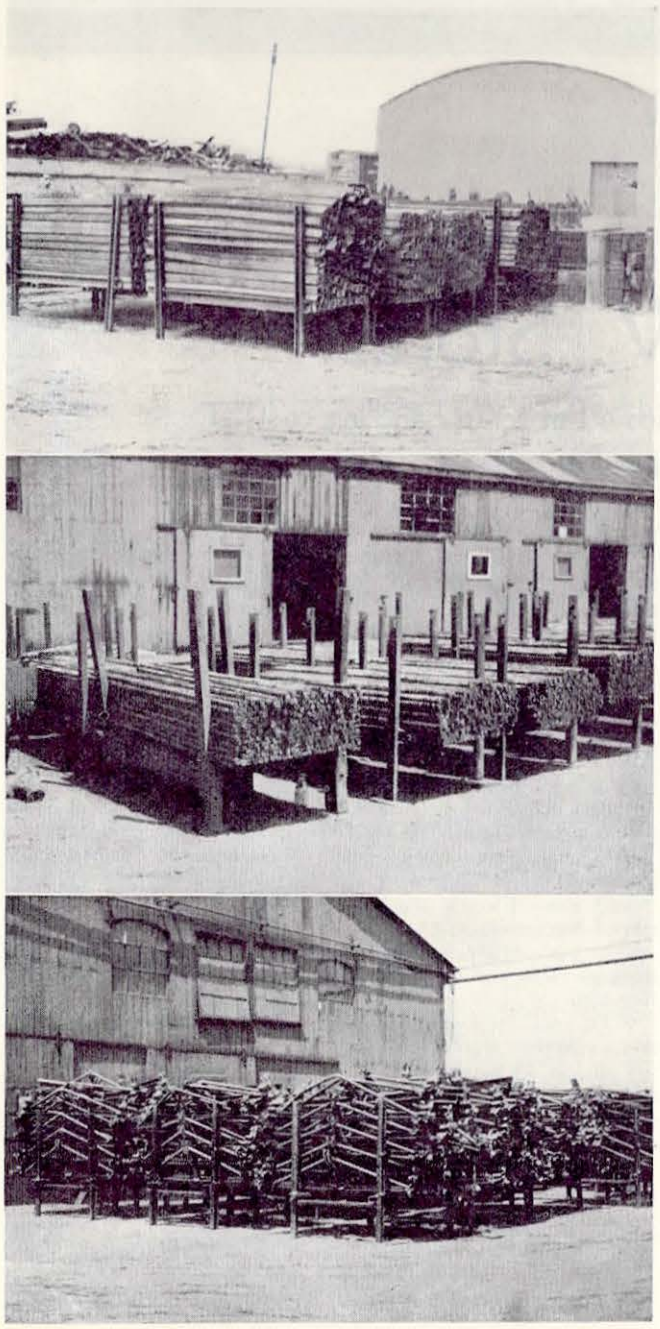
10:05 a.m.—Electric lift truck handling forgings from stock to shops.

10.10 a.m.—Tractor truck hauling lumber from stock to shops.

10:15 a.m.—Mechanical-department truck picking up empty trailers at one shop to be loaded at blacksmith.

10:25 a.m.—Tractor taking empty barrels from scrap yard to shops to be loaded with coke.

10:40 a.m.—Tractor taking scrap from shops to scrap yard.



(Top) Channels Loaded on Portable Racks for Straightening—(Center) New Brake Rods Ready for Assembling Brake Beams—(Bottom) Repaired Brake Beams Loaded on Portable Racks for Economical Handling

10:50 a.m.—Mechanical-department truck taking springs from shops to storehouse.

11:05 a.m.—Electric lift truck taking bolts from bolt house to storehouse for shipment.

Low Scrap Handling

In handling scrap, the work is organized to avoid unnecessary work, and this applies to the entire road. The result is that much scrap which ordinarily finds its way into railway scrap piles does not touch the ground after it is loaded the first time. The average cost of handling at Chicago is figured at 36 cents per ton, counting the materials which are rehandled at the scrap dock. This yard is 1,500 ft. long and has six tracks, with the space between tracks occupied by bins, consisting of floorless compartments of timber about 16 ft. square and 2 ft. deep, each bin for one kind of scrap only.

Sorting and Loading of Scrap

As nearly as possible, scrap is sorted and loaded at its origin to reduce handling costs elsewhere. Rail is loaded separately from track scrap and, where any considerable quantity of miscellaneous scrap is gathered, the effort is made to keep each class of scrap separate from the other. The same rule applies to shop scrap. Scrap cars which accompany supply cars first move to the division store where the usable material is removed and the scrap placed in one end of the car while the material to be repaired is placed in the other end so that the scrap can be unloaded at Chicago and other material left in the car for the reclamation plant. This saves extra handling and sorting. At car yards where large quantities of scrap are produced, the scrap is supervised by the store forces, even to the cutting of dismantled cars into the proper sizes and, where possible, straight cars are loaded and sold without rehandling at Chicago. Where this is not practicable, the cars start from one yard on regular loading dates and are billed to the next yard to assure full loading of all cars reaching Chicago.

When cars of scrap are received, they are inspected and switched to the scrap dock only in case the load of scrap requires sorting or other preparation for sale. If the scrap is heavy and comes in open-top cars, one of three locomotive cranes equipped with a magnet is used in the handling process; otherwise, the scrap is unloaded by hand. The men sort the material into the proper bins as they throw it from the cars, instead of unloading it promiscuously and having to sort it later. A similar practice is followed with scrap brought to the dock by hand. A similar practice is followed with scrap brought to the dock by tractor from local shops. If the proper bin is out of reach, the material is thrown to one side in the car until the car is moved and, when the car is moved, other bins are available for the scrap previously unloaded, so that a car need move only in one direction.

One track is used exclusively for rail. A locomotive crane places four or five cars of rail on this track while empty cars are spotted on each side. The rail on the car nearest the crane is then sorted by transferring all but one class of rail directly to the side cars, whereupon the crane switches the car of prepared rail to a spur and repeats the performance with the next car of mixed rail. In this way, the rail passes directly from one car to another without touching the ground. A small building is included in the scrap dock for straightening spikes and sorting serviceable nuts found in the scrap.

Salvage Extensive

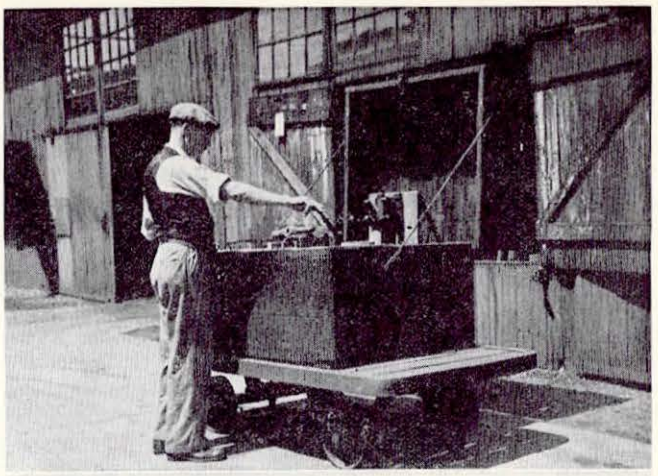
Two buildings, 30 ft. wide and 200 ft. long, with a concrete paving 16 ft. wide between them, house the reclamation activities of the stores. This building lies between the scrap yard and the storehouse, with the blacksmith shop of the car department nearby. Repairs that can be made satisfactorily in the shops of the mechanical department are avoided, but the work is extensive. Every storekeeper has a list of reclaimable materials, which include draft gears, coils, springs, couplers, brake beams, track tools, etc., and such ma-

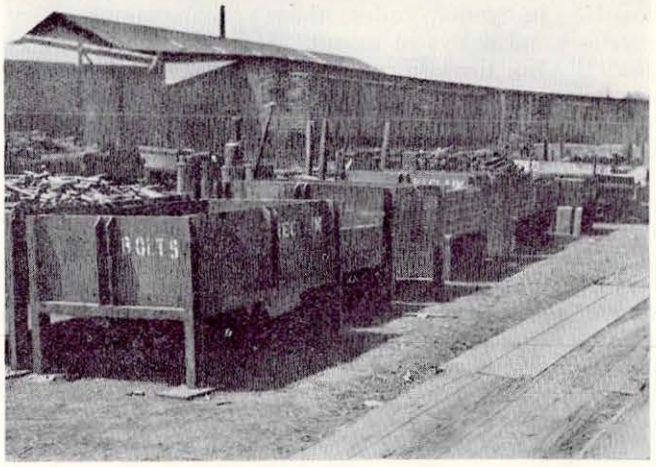
terial is loaded separately from scrap. Scrap is further inspected when the cars are received at Chicago and handled over the scrap dock so that material will not be discarded if it has any further value to the railroad.

The shops are equipped with:

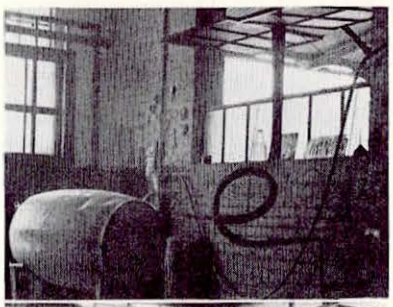
17 oxyacetylene outlets piped from the generating plant.
1 steam hammer weighing 1,500 lb., used principally for straightening couplers.
1 small bulldozer for bending rods, etc.
1 open-top oil furnace for heating couplers.
1 combined alligator and cut-off shear.
1 rolling mill for reducing round iron.
1 multiple-head bolt header.
1 power punch for making washers, etc.
1 pyrometer-controlled oil furnace for coil springs.
1 cooling vat for coil springs, equipped with a circulating system.
1 coil spring tester.
2 coal forges.
2 oil forges.
1 small oil-fired annealing furnace.
1 80-lb. hammer.
1 brake beam assembly table equipped with air-operated motors.
1 slack adjuster for brake beams.
1 brake-beam testing machine.
1 vat with overhead trolley for painting brake beams.

The re-use of old brake-beam truss rods is not forbidden, but it has not been found worth while to save the rods from old freight beams. However, the usable rods from passenger and tender beams that are over 1½ in. in diameter are reused. With this exception, dismantling of brake beams is simplified by cutting off the ends instead of unscrewing the nuts. The channels are straightened cold and new rods, purchased to size, are threaded and bent in the shop and the nuts are applied by power threaders while the beam is clamped to the assembly table, after which the beam is stretched in a slack adjuster, dipped in a paint bath and loaded on skids for handling in lots of 17 by lift truck. One beam of each day's run is tested.



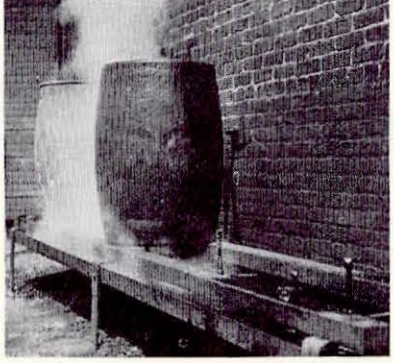


(Top) Portable Magnetic Box for Testing Tools—(Bottom) Portable Containers for Handling Materials Through Reclamation Plant



Nozzle for Steaming Oil Barrels

Siphoning Residual Moisture



Rack for Cleaning Heavy Oil Barrels

Test Track Tools

With the increased use of alloys and heat treatment, all track tools are now repaired at Chicago where new and old tools are tested electrically for flaws and cracks. A portable apparatus is used, in which storage batteries produce a current of 36 volts and 50 amp., which magnetizes the tool so that iron filings brought in contact with it after the polarizing operation adhere to the surface wherever cracks occur.

All salvage work is performed only on store orders calling for specified amounts of material, and the work is subject to inspection by the test department while cost records are kept and periodic comparisons made with the price of new material.

Oil Handling

A description of the new oil-house has already appeared in these columns.* Since this storehouse was built, the handling of oil has been further improved. Barrels containing heavy oils are now cleaned, five at a time, by removing the plugs and placing them upside down over steam vats and applying steam under pressure to the inside of the barrel, usually for 10 minutes. The steam enters one hole in the head of the barrel and the contents are drained through the other. Barrels containing lighter oils are placed, one at a time, on a special tumbling rack so that the barrel lies horizontal. Steam is applied through a long nozzle, after which the

*February 1, 1931, *Railway Age*.

barrel is placed on end and any residual moisture extracted by an air syphon.

Recently several hundred 40-gal. barrels were purchased and are now distributed to all section houses or stations where gasoline is furnished by commercial companies, and operators of track motor cars and other equipment requiring gasoline will obtain their supply of gasoline in quantities of 25 gal. or over to secure the benefit of a lower price per gal. prescribed under the petroleum code.

To minimize switching expense, as well as the cost of stores labor, cars are loaded at one or more points in the yard of the Chicago store, dependent upon the location and amount of each kind of material to be loaded in a car and the ease of moving it from one spot to another. If orders cannot be held long enough to load an entire car for one point, the material from different stores is separated in the car and all cars are loaded, so far as possible, in station order, thus avoiding unnecessary expenses and delays in transit. Since the road operates generally in three directions out of Chicago, north, northwest and west, respectively, co-operation with the transportation department is secured by loading the cars for each route on different days so that practically all cars loaded each day can be made into a train without reclassification. On the other hand, according to D. W. Corcoran, general storekeeper, the supply organization has the co-operation of other departments, this co-operation manifesting itself especially during the depression in the assistance obtained from the motive power and car departments and the engineering and maintenance forces in removing obsolete material from stock.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended December 22 totaled 547,895 cars, a decrease of 30,040 cars as compared with the week before but an increase of 16,431 cars as compared with the corresponding week of last year and of 53,385 cars as compared with 1932. All commodity classifications showed decreases from the figures for the previous week but increases as compared with last year were shown as to all but merchandise, ore and coke. The summary, as compiled by the Association of American Railroads, follows:

Revenue Freight Car Loadings

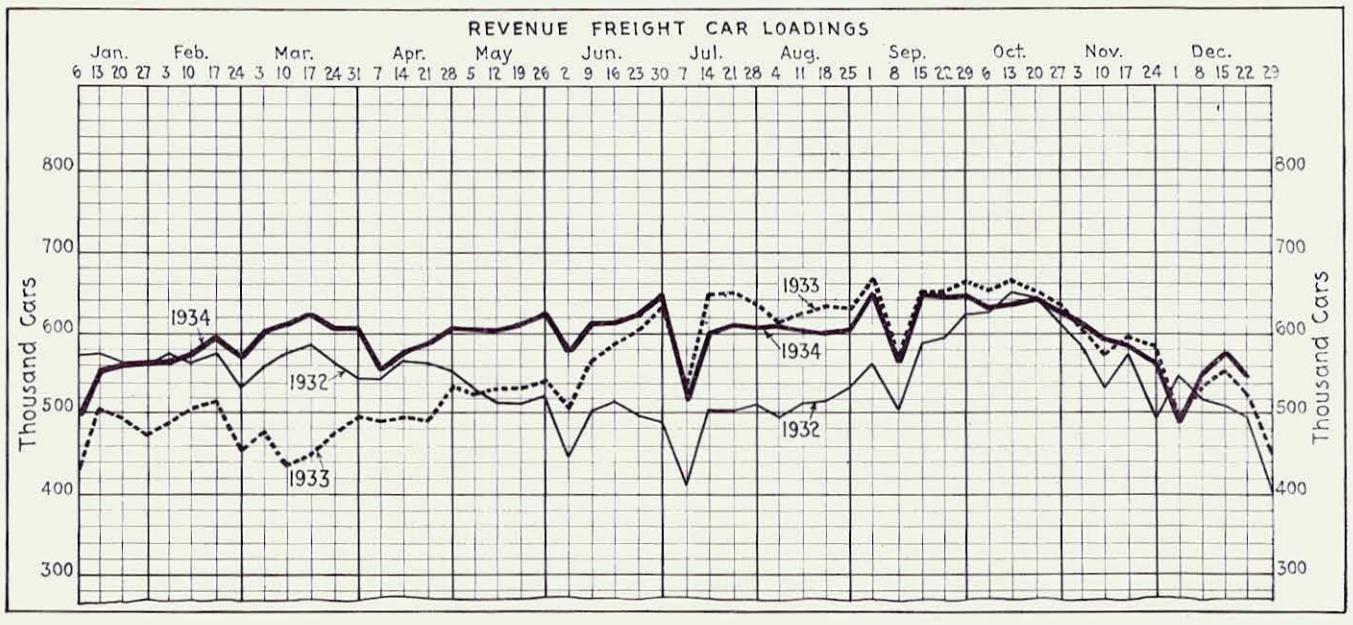
Week Ended Saturday, December 22, 1934

Districts	1934	1933	1932
Eastern	127,130	125,309	118,348
Allegheny	105,684	106,110	96,886
Pocahontas	41,662	36,982	38,433
Southern	82,799	76,500	75,065
Northwestern	63,440	59,566	55,462
Central Western	81,316	83,114	70,011
Southwestern	45,864	43,883	40,305
Total Western Districts	190,620	186,563	165,778
Total All Roads	547,895	531,464	494,510
Commodities			
Grain and Grain Products	24,850	24,512	25,368
Live Stock	15,565	14,948	14,232
Coal	138,395	123,510	140,900
Coke	6,289	6,773	6,630
Forest Products	19,895	18,143	12,656
Ore	3,282	3,740	1,903
Merchandise L.C.L.	151,616	155,622	154,290
Miscellaneous	188,003	184,216	138,531
December 22	547,895	531,464	494,510
December 15	579,935	559,419	515,769
December 8	551,011	541,992	520,607
December 1	488,118	499,596	547,095
November 24	561,313	585,738	493,318
Cumulative Total, 51 Weeks	30,360,474	28,765,287	27,774,651

Car Loading in Canada

Car loadings in Canada for the week ended December 22 totaled 40,935, as against 35,623 cars in 1933 and 43,367 cars for the previous week, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
December 22, 1934	40,935	20,920
December 15, 1934	43,367	21,644
December 8, 1934	43,418	19,096
December 23, 1933	35,623	18,632
Cumulative Totals for Canada:		
December 22, 1934	2,290,423	1,083,968
December 23, 1933	2,002,610	940,674
December 24, 1932	2,150,554	958,690



Marine Borer Attack Increases Along the New England Coast*

Indications of increased activity, with threat to many railway structures, are being uncovered by new investigating committee

By F. C. Shepherd
Consulting Engineer, Boston & Maine

AS the result of some very alarming reports, received early in 1933, of unusual activity of marine borers in Boston and Plymouth harbors, the New England railroads, in conjunction with the Commonwealth of Massachusetts and the State of New Hampshire, realizing the possibilities of damage to their many bridges, piers and wharves, have, during 1934, been carrying on extensive marine borer activity tests all along the New England coast. The tests thus far indicate the presence of teredo, or so-called shipworm, on Long Island sound and around Cape Cod and Plymouth harbor, while limnoria are indicated as present in Boston harbor and to the north. In many places, the teredo and limnoria attacks have been very severe.

The tests have been carried out along the lines employed by the committee organized by the National Research Council in 1922, for which Col. William G. Atwood acted as director. The present investigating committee, of which the speaker is chairman, has engaged Dr. William F. Clapp, of Duxbury, Mass., to carry on its biological survey, as he did for Col. Atwood and the earlier committee in 1922.

In undertaking our present investigation, the first step was to place test boards where there are any bridges, piers or other marine structures. At the present time, we have some 80 boards in the water, from New York to Eastport, Me. Some of these boards have, at the time of this report, been in the water for a period of five months.

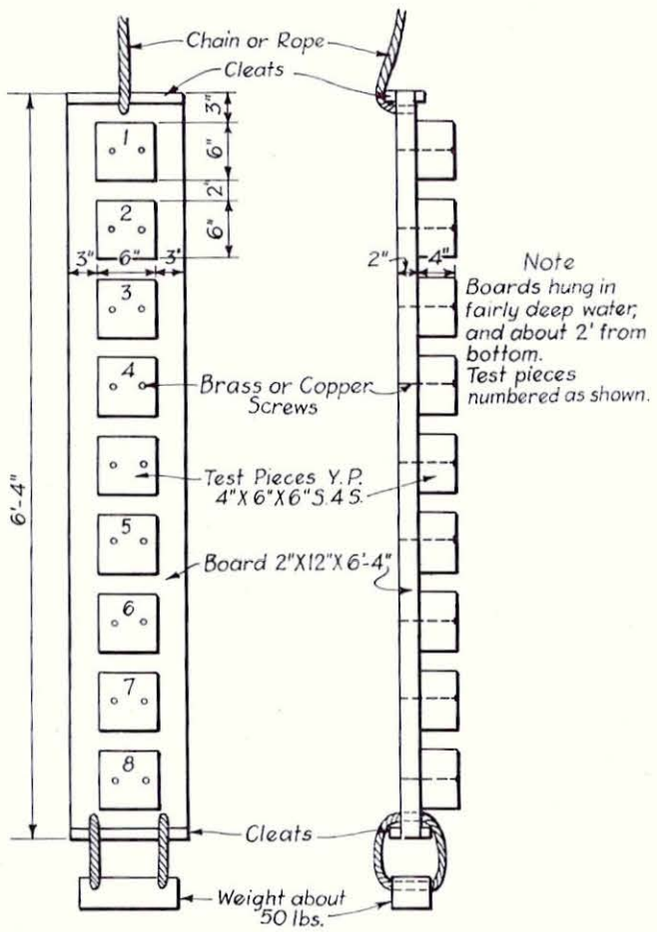
Examination of the test boards is made each month. At these times a block, 4 in. by 6 in. by 6 in., is removed from each board, in addition to a control block of similar size, which has only been in the water for one month. Thus, we have at the time of each inspection, a comparison between the activity on a board that has only been in the water one month, and the destruction of the block that may have been in the water for one to six or eight months.

When the blocks are removed, they are carefully wrapped and are then forwarded immediately to Dr. Clapp, where a careful biological examination is made of each. The results of this examination are compiled for the information of the committee, and all of the blocks are indexed and catalogued for future reference. As a result of this method of carrying out our work, we have a record of the condition of the blocks as they are removed each month, as well as a check from the control blocks as to changes in the severity of attack from month to month.

In addition to installing test blocks, the committee has been in touch with many of the dock building concerns and has interested them, so that they are now co-operating and are furnishing samples of piling from points where they may be at work on repairs or replacements. As a result, we are getting many samples for our biological survey in addition to our own blocks.

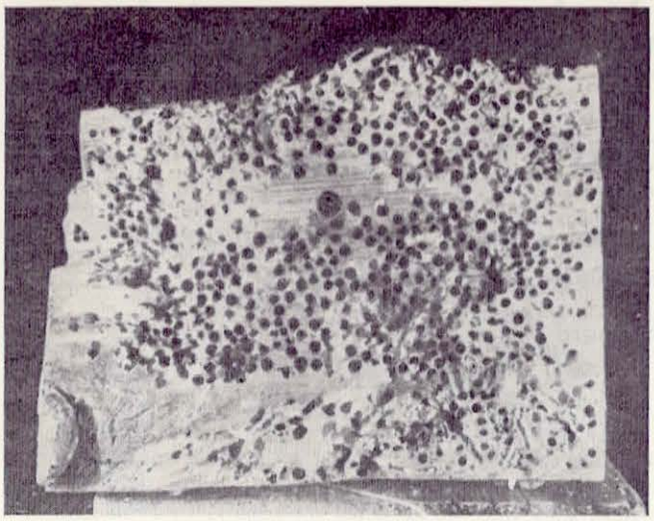
Conditions Becoming Worse Around Boston

The report that really started us on our present investigation came as the result of an examination of piling at the Army base in South Boston late last year. The Army base was built in 1918 and, because of wartime conditions, untreated southern pine piling, with the bark on, was used in the foundations, there being some 27,000 piles beneath the structure. The inspection of about 10 per cent of these piles resulted in the conclusion that some 34 per cent of the original area of the piles had been destroyed at the low-tide line by



Details of the Test Boards Being Used in the New England Marine Borer Investigation

* Report on the marine borer investigation being made in New England, presented before the American Association of Port Authorities, in New York, on September 10, 1934, by Mr. Shepherd, who is chairman of the investigating committee.

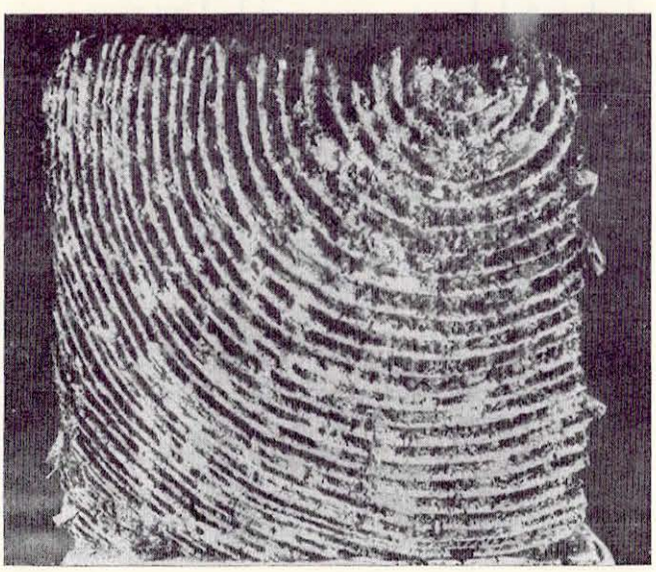


A Test Block, Riddled by Teredo in Three Months at Marion, Mass., on Buzzards Bay, Where the Most Severe Attack by Teredo Has Been Observed

limnoria. It resulted further in the feeling that this damage was the result of a fairly recent attack.

Upon our suggestion, test boards were installed at the Army base in June, 1934. The blocks which have been removed thus far show that the attack of limnoria is still going on at a very rapid rate, and that for each two-month period, from ½ to ¾ in. of wood is being destroyed. Dr. Clapp estimates more than 8 per cent loss of wood per year.

A report of an inspection, made late in 1933, of the piling beneath Commonwealth pier No. 5 in South Boston, showed that, from an examination of about 10 per cent of the 6,070 oak piles beneath this structure, about 20 per cent of the area of the piles had been destroyed by limnoria. Test boards at this point after two months had not indicated a very heavy attack of limnoria, although some attack has been made on the blocks. At the New Haven piers, which are just up the harbor from the Commonwealth pier, the third and fourth-month blocks show a very heavy attack of limnoria, almost equal to that at the Army base. Recently, through the co-operation of the Sea Board Construction Company, three-month blocks have been received from the Central and India wharves in Boston harbor. All of these blocks show very heavy attaks of limnoria, with destruction to a depth of at least ½ in.

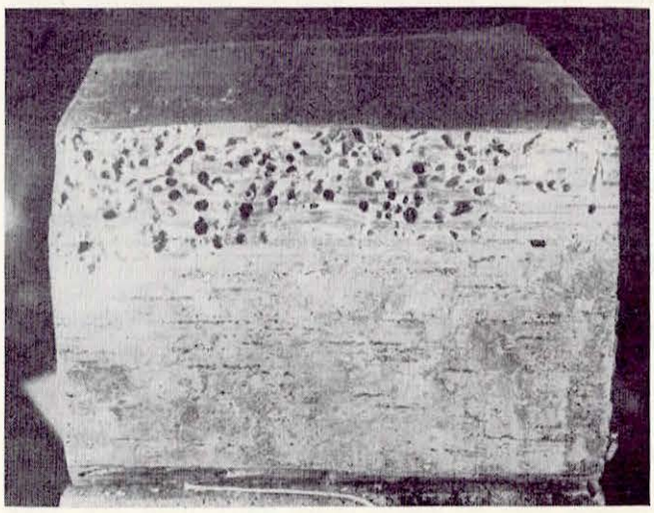


One of the Test Blocks, After Five Months' Exposure at the Army Base in South Boston, Mass., Showing the Severe Attack of Limnoria

While I do not have the final reports, we understand from the results of a diver's inspection that the piling beneath the Cunard wharf in East Boston was found to be so badly attacked that nearly 15 per cent of the piles had been cut off at the mud line. Above this point in Boston harbor, in the Charles and Mystic rivers, we find from our own blocks, which have been in the water four months, very little indication of marine borer attack. We are, however, beginning to get indications of attack on both sides of the Navy yard, particularly at the end of our Mystic wharf piers.

The City of Boston is at the present time making extensive repairs to the so-called Chelsea bridge over the North channel of the Mystic river. From this work we have two sections of piling which indicate a very heavy limnoria attack, some of the piling having been completely cut off. These sample sections also show some recent teredo tubes.

While this is the first mention that I have made of teredo in Boston harbor, it can be stated that we have found recent teredo tubes in various parts of the harbor. However, these have not been sufficient to cause us worry, especially in view of the much heavier attack of limnoria. This relative lack of teredo in the harbor may be due to the condition of the harbor water, either as the result of sewage contamination or lower salinity, or the heavy limnoria attack may prevent the teredo from actually getting a foot-hold. Certainly, Boston harbor is experiencing an attack of limnoria on its marine structures, which is unprecedented and, at present, unexplainable.



This Block, Immersed for Three Months at New Bedford, Mass., on Narragansett Bay, Shows a Quite Severe Attack of Both Teredo and Limnoria

North of Boston, we have, as yet, found little indication of possible trouble, until we reach Portland harbor, where, in the 1922 investigation, a fairly heavy attack from limnoria was found. The Portland Terminal Company has six test boards at various points here and, at the end of four months, the blocks further down the harbor were beginning to show a fairly heavy attack of limnoria. In our boards along the coast of Maine, from Portland to Eastport, there is as yet very little indication of severe attack.

In all of the test boards in Boston harbor and to the north, we have as yet found no indication of teredo,

(*Continued on page 19*)

I. C. C. Annual Report

Commission notes increased traffic but lower net—Recommendations await Eastman's reports

WASHINGTON, D. C.

BECAUSE the commission is withholding its recommendations for further transportation legislation for its comments on the report or reports to be submitted by Co-ordinator Eastman, the annual report of the Interstate Commerce Commission to Congress for the year ended October 31 consists largely of a routine report of its activities and those of the carriers. The commission calls attention to the increase in traffic and to some extent in earnings of the railroads during the first part of 1934, as compared with those of the lowest level of the depression, but it also notes that during the year expenses have been increasing faster than revenues. Referring to the restoration of the 10 per cent cut in wages that was made in 1932, it says the ability of the railroads to bear this will depend in large part on the further revival of traffic, since wages are to be restored to a level higher than that of 1926 while freight rates and passenger fares are somewhat below the 1926 levels.

Two specific recommendations are made in the report, proposing amendment of the interstate commerce act, to change the date for making the commission's annual report to Congress from December 1 to January 1, because of the change in the date for the convening of Congress, and to provide that on the expiration of their terms of office commissioners shall continue to serve until their successors are appointed and qualified. It is pointed out that under the present law the terms of commissioners expire December 31 of each year and it will not be possible to fill the vacancies until after Congress has convened.

Changes in the provisions of Section 77 of the bankruptcy act to facilitate railroad reorganizations also are declared to be necessary, although the commission does not make specific recommendations. It suggests among other subjects that Congress consider the propriety of broadening its authority in the matter of fixing the maximum limits of compensation of trustees to include the officers of railroad corporations while under jurisdiction of a court.

The commission also renews its recommendation of last year that section 1 of the act be amended to remove all doubt as to its jurisdiction over such portion of transportation and transmission from a foreign country through the United States to foreign country as takes place within the United States.

Referring to the railroads' application for an increase in freight rates the commission says the proceeding "will be pushed to submission as rapidly as the importance and complexity of the issues permit."

Reviewing the situation as to earnings and traffic the commission says in part:

Railway Earnings and Traffic

The traffic of the steam railways in the first half of 1934 was substantially above that of the lowest level of the depression. This statement applies both to freight traffic and to passenger traffic, but there has been some recession since June in freight traffic. The trend of the revenues makes a less favorable showing than does the traffic, partly because of various reductions in rates and fares, but also in part because of the loss of short-haul traffic which affects the revenues relatively more than it does the ton-miles and passenger-miles, here used to measure traffic volume. But even with respect to the revenues there has been some improvement since the lowest depth of the depression. In this connection it may be noted that the freight surcharge, made effective on January 4, 1932, expired September 30, 1933, and many reductions have become effective after representation by the carriers that they were necessary to meet highway competition. The following table of index numbers shows the recent trend in four series of figures, after seasonal adjustments:

Index numbers of traffic and revenues of Class I steam railways, seasonally adjusted.

[Average of 1923-25 = 100]

Period	Freight ton-miles	Freight revenue	Passenger miles	Passenger revenue
Low of 1932.....	(Aug.) 49.0	(Aug.) 47.8	(Aug.) 42.3	(Aug.) 30.1
High of 1932....	(Jan.) 65.6	(Jan.) 62.8	(Feb.) 51.0	(Jan.) 41.2
Low of 1933.....	(Mar.) 51.6	(Mar.) 46.0	(Mar.) 36.0	(Mar.) 25.7
High of 1933....	(July) 73.2	(July) 65.7	(Oct.) 55.2	(Oct.) 35.0
1934—				
January	67.1	60.9	45.5	29.5
February	69.0	60.7	46.5	31.1
March	74.0	63.2	48.6	32.1
April	69.9	61.7	49.8	31.9
May	72.8	60.6	46.2	30.7
June	70.0	61.6	47.9	32.3
July	66.4	60.6	49.7	32.0
August	61.7	55.1	50.4	31.4
September	...	55.1	...	31.6

Total rail operating revenues, including both freight and passenger, in 1932 were 51.2 per cent of the 1923-5 average; in 1933 50.6 per cent; and for the first nine months of 1934, 54.6 per cent of the same months in the base years.

Total operating expenses in 1932 were 51.7 per cent of the 1923-5 average; in 1933, 48.4 per cent; and for the first nine months of 1934, 53.0 per cent of the same months in the base years. The expenses for the nine months of 1934 were 10.2 per cent higher than in the same period in 1933, reflecting changes in traffic, wages, prices of materials, and maintenance policy. Although depreciation charges continue on a pre-depression basis, we have permitted extensive retirements during 1933 and 1934 to be charged to profit and loss instead of to operating expenses, and also, some repairs, carried out with the aid of Public Works Administration loans, have been with our permission, in part charged to profit and loss instead of to operating expenses. Beginning with 1935 depreciation of equipment will be charged to operating expenses on a standardized basis.

Actual maintenance work in 1934, as compared with 1933, has increased slightly more than in proportion to the traffic, as is shown by comparing man-hours and traffic, a comparison which is not affected by changes in prices, wages, or methods of financing.

The figures show a curtailment of maintenance work more rapid than the fall in traffic from 1928 to 1933.

The 10 per cent wage cut of February 1, 1932, was reversed to the extent of 2½ per cent on July 1, 1934. During 1935 the remainder of the 10 per cent wage cut is to be rescinded. The ability of the railways to bear this will depend in large part on the further revival of traffic. The freight rates, however, are somewhat below the level of those of the prosperous year 1926, often referred to as a year having a desirable level for commodity prices, and passenger fares average considerably lower than those of 1926, while wages are to be restored to a level higher than that of 1926, since there was an upward tendency in wages between 1926 and February 1, 1932, when the 10 per cent cut in employee compensation was made. The cost of coal used by railways was 19.1 per cent higher in July, 1934, than in July, 1933, but 13.2 per cent lower than in July, 1926.

The somewhat higher level in traffic and maintenance in 1934 compared with 1933 is reflected in a small increase in the number of persons employed. After adjustment for seasonal variation, the index number of railway employment was 56.2 for August, 1934, compared with 52.0 in May, 1933, these figures being percentages of the 1923-5 average. There was also some elimination of part-time work with an increase in the average hours worked per employee in 1934 as compared with 1933.

The reported net railway operating income remaining out of revenues after charging operating expenses, operating rentals, and taxes, reached a low level in 1932, followed by improvement in 1933 and in the first half of 1934. Since June there has

been a fall in this item below corresponding periods in 1933 because of advancing costs and somewhat smaller revenues. The net railway operating income for the first half of 1934 was 53.9 per cent of the 1923-5 average for the same months; for July this index declined to 41.4 per cent and in August to 37.8 per cent.

Although in the first four months of 1934 the deficit was smaller than in the same period in 1933, the comparison has been less favorable for 1934 after April, and the year will probably close with a deficit, without considering the unusual charges to profit and loss referred to above.

The interest accruals were in excess of actual payments to the extent of $70,299,617 in 1933 and $160,270,923 for the five-year period, 1929-1933, owing to defaults on certain bond issues by railways operated by receivers or trustees. The length of such roads on December 31, 1933, was 39,206 miles, or nearly 16 per cent of the total for all steam railways. Their book value was $2,853,636,688; their unmatured funded debt, $1,808,332,469; and their matured funded debt, $97,486,852. These figures do not include those of the Chicago, Indianapolis & Louisville Railway Company, which went into trusteeship January 1, 1934.

Abandonment of 14,570 Miles Authorized Since 1920

Attention is called to the increasing number of applications filed by carriers for permission to abandon lines in order to reduce the financial losses incurred in their operation. From the effective date of section 1 (18), May 29, 1920, to October 31, 1934, the commission granted 854 applications, involving abandonment of railroad lines or of the operation thereof and during the same period the abandonment permitted involved 704.64 miles of main line, 5,753.76 miles of branch line, and 63.45 miles of other mileage, of class I carriers, together with 6,408.63 miles of so-called "short lines," of which 4,612.89 constituted the entire lines of the carriers and 1,795.74 miles only portions of such lines. The above figures do not include abandonment of trackage-right operation or ferry and boat lines.

A summary of all abandonment applications follows:

Year ended October 31—	Number of applications filed	Miles sought to be abandoned	Number of certificates issued permitting abandonment	Miles permitted to be abandoned
1920	9	235.47	..	.....
1921	40	1,035.32	31	701.93
1922	47	808.46	30	526.53
1923	36	964.94	19	523.41
1924	52	949.82	30	453.83
1925	57	883.21	46	651.97
1926	46	937.19	49	592.56
1927	56	792.26	52	830.61
1928	53	752.21	61	587.05
1929	69	*1,716.57	48	539.53
1930	75	980.83	72	*1,807.46
1931	88	1,075.53	89	1,019.31
1932	114	2,281.42	90	1,418.27
1933	153	3,263.21	129	2,404.26
1934	125	2,013.48	154	2,514.22
Total	1,020	*18,689.92	900	*14,570.94

* Includes 881.65 miles of which the Delaware & Hudson Co. was permitted to abandon operation and which was acquired and operated by the Delaware & Hudson Railroad Corporation, a new company.

While the above summary shows the number of miles permitted to be abandoned, information is not available as to the total number of miles which were actually abandoned under the permissions granted. From the effective date of section 1 (18) to October 31, 1934, certificates permitting abandonment were issued covering approximately 12,930.48 miles of road. In proceedings in which such certificates were issued, covering approximately 9,482.46 miles of road, the estimates of average annual losses from continued operation or of future annual savings resulting from abandonment amounted to $11,362,441. In the proceedings covering the remaining 3,448.02 miles, estimates of losses or savings were not given. The reason generally advanced to warrant abandonment in those instances was insufficient traffic, resulting from various causes, including failure of expected traffic to develop, exhaustion of sources of traffic in the case of forests and mines, and losses of traffic to competing lines of railway or other transportation agencies.

The actual monetary savings resulting from the abandonment of mileage is frequently an indeterminate amount, and while we are satisfied in such cases that abandonment is in the interest of economical operation, the saving cannot be stated in exact figures. In nearly all cases abandonment results in the loss of traffic, but in many cases some portion of the traffic formerly handled on the abandoned mileage continues to reach the railroad by highway.

It has been shown in certain cases that the necessary cost of rehabilitation or of bringing up deferred maintenance of trackage which it was proposed to abandon, aggregating about 3,944 miles, would require an expenditure estimated at $19,825,311. Since this amount would necessarily be expended in order to continue operation, abandonment would result in a saving which to that extent can with considerable accuracy be estimated in advance.

The abandonment of railway lines during the year amounted to 2,020 miles of road, and only 122 miles of new line were constructed. The aggregate length of steam railways (first track) in the United States at the close of the year 1933 was 245,703, a decline of 1,892 miles from the 1932 total, this decline being the net result of the abandonments, construction, remeasurements, and reclassifications. The miles of second or additional main tracks were again diminished during 1933, the first decline in this item having occurred in 1932. The number of locomotives declined by 2,504 or 4.4 per cent, the number of freight-train cars by 112,058, or 5.1 per cent and the number of passenger-train cars by 2,921, or 5.8 per cent, during 1933. The total tractive effort of locomotives decreased 3.4 per cent, and the capacity of freight cars decreased 4.1 per cent.

Capital stock and unmatured funded debt (with a maturity of more than two years from date of issue) decreased respectively $15,670,200 and $158,956,069 during the year, making a total decrease in railway capital of $174,626,269. The current liabilities (including tax liability) of class I steam railways and their nonoperating subsidiaries exceeded the current assets by $418,504,869 at the close of 1933, compared with a corresponding excess of $271,507,026 at the close of 1932. The reported property investment was $185,029,222 less at the close of 1933 than it was one year earlier.

Reconstruction Finance Corporation Act

Since the last report the commission has approved loans under the Reconstruction Finance Corporation Act aggregating $82,958,575 upon applications filed by 9 carriers. The aggregate amount of loans approved by it under this act is $512,537,291.34. Since work under this act was initiated, in February, 1932, applications for loans have been filed by 152 carriers or their receivers or trustees. Loans to 81 of these applicants were approved. For various reasons it was unable to approve loans on the applications of 41 others, and has revoked approval of 8 loans. In 20 cases the applications were dismissed, usually with the consent of the applicants, and in 2 cases the applications are under investigation. Some of the applicants have received more than one loan. Continued recourse to financing under the provisions of this act has been forced by unimproved business conditions and by drought prevailing in certain sections of the country.

The commission has approved the extension of the time of payment of loans aggregating $27,708,248.46 upon applications filed by 7 carriers.

Reorganization of Railroad Companies

Since the last report petitions for reorganization have been filed in the district courts of the United States by the Chicago, Indianapolis & Louisville Railway Company and the Kansas City, Kaw Valley & Western Railroad Company. No petitions have been offered by creditors. Hearing has been opened in the St. Louis-San Francisco proceeding, but circumstances have necessitated indefinite adjournment.

In one proceeding the commission has made application to the court for determination whether or not the debtor corporation is insolvent, and in one other case has recommended a reasonable time within which a plan of reorganization may be proposed.

During the past year no plans of reorganization have been presented formally for consideration in any of the pending proceedings. Informal discussions have been

held with interested parties in several of the proceedings regarding the presentation of plans. The proceedings have been delayed in many cases by an apparent reluctance on the part of the debtor corporations to present plans of reorganization. This attitude appears to be attributable largely to a desire to defer determination of the debtors' maximum allowable capitalization until improvement in business conditions shall afford a better indication of future earning power.

It has become quite evident, the commission says, that the advantages hoped for in the enactment of section 77 of the Bankruptcy Act are not likely to be realized without substantial changes in its provisions. The prompt presentation of plans of reorganization is the greatest need. Under the present statute the court has power to set a limit upon the time for the filing of claims and, after considering any recommendation that we may make, for the proposal and acceptance of plans of reorganization; but it is believed that the prescription of definite statutory periods, subject to modification only under compelling circumstances, would have a salutary effect.

Proceedings under section 77 could be further facilitated by a legislative definition of insolvency, as applied to operating railroads, and the designation of an agency and procedure whereby the fact of insolvency may be uniformly, speedily, and economically determined. In order to obtain the benefits of the section a railroad corporation must be "insolvent" or "unable to meet its debts as they mature." A petition for reorganization filed by a railroad corporation is subject to approval by the court without the necessity of securing our approval; but a petition filed by creditors must have our approval before being presented to the court, involving a determination of proper qualification as a condition precedent. Further, the acceptance of a proposed plan of consolidation by the stockholders of a railroad corporation is not necessary where the court shall have determined that the corporation is insolvent; and an approved plan of reorganization is binding upon stockholders where a finding of insolvency has been made. The Supreme Court has provided in its rules that upon our application, prior to our approval of a plan of reorganization, the court, after a hearing, shall determine whether or not a corporation is insolvent. Apparently, the courts are regarded as the only present authority for the determination of this question. Considering that reorganizations will take place in many different jurisdictions, there is ground for the belief that better results might be obtained by the designation of a common agency for the performance of this duty.

Among other subjects that properly may be considered by the Congress are the propriety of broadening our authority in the matter of fixing maximum limits of compensation to include the officers of railroad corporations while under jurisdiction of the court; a more effective method of hastening the submission of claims and the classification of claimants as a necessary preliminary to the consideration of reorganization plans; and public supervision of the activities of protective committees, particularly of the issuance of certificates of deposit, and possible modification of the present requirement of assent by security holders to a plan found after a hearing to be fair and in the public interest.

Bureau of Finance

Certificates of public convenience and necessity were issued during the year authorizing 70.5 miles of new construction in 19 cases, 2,514 miles of abandonment, in 154 cases, and acquisition or operation of 519 miles in 28 cases. Since the effective date of the act the commission has authorized the construction of approximately 9,762 miles of new railroad. Based on reports by carriers and other available data, it appears that of the construction authorized, approximately 6,827 miles of road have been completed, and that projects aggregating about 1,649 miles have been abandoned or deferred. The following tabulation shows by classes the respective amounts of securities authorized in 1934:

Class of security	Nominal issue	Conditional issue	Actual issue
Common stock	.....	$27,600,000	*$65,355,900.00
Preferred stock	.....	.....	6,000.00
Prior-preference stock	.....	.....	17,262,700.00
Mortgage bonds	$31,120,000	$849,548,000	†$135,019,289.47
Collateral trust bonds	.....	.....	124,846,100.00
Debentures	4,500,000	4,500,000	.....
Secured notes	.....	.....	224,279,726.89
Unsecured notes	.....	.....	41,870,000.00
Equipment-trust obligations	.....	751,000	96,689,500.00
Receivers' certificates	.....	.....	4,972,000.00
Trustee's certificates	744,252	.....	290,000.00
Total	$36,364,252	$882,399,000	‡$710,591,216.36

* Also 6,490,667.9 shares without par value.
† Includes $2,214,000 of interim certificates.
‡ See footnotes 1 and 2.

The report states that of the $350,600,667 loaned to carriers under section 210 of the transportation act, $318,268,725 had been repaid and interest paid on the loans amounts to $90,139,134.

Docket Condition Improved

The condition of the commission's docket has considerably improved. The number of formal complaints filed during the year was 545, of which 486 were original complaints and 59 sub numbers, a decrease of 196 as compared with the previous year, and the number of cases pending on the commission's docket on October 31 was 994, as compared with 1,460 in 1933, 1,783 in 1932, and 1,904 in 1931. The commission disposed of 1,355 cases during the year, as compared with 1,442 the year before. It conducted 765 hearings as compared with 1,028 the year before. Approximately 37 per cent of the total number of formal complaints are now handled by the shortened-procedure method.

A great deal of the time of the commission's organization has been devoted to research work on investigations for the co-ordinator, the Reconstruction Finance Corporation, and other government activities.

Following are additional extracts from the report:

Unnecessary and Excessive Expenditures for Special Services and for Salaries of Officers

Information having reached us from various sources of instances of the payment by carriers of excessive fees for special service of a legal, financial, or other description, not connected with construction or physical operation, we issued an order under date of March 19, 1934, requiring all class I steam railroads to report to us all expenditures of the classes described in the order, amounting in the aggregate to $5,000 or more per annum, for the years 1930 to 1933, inclusive. Certain classes and items of expenditures reported require further investigation. Therefore, a full report is not yet practicable. However, it is clear that there is ample ground for criticism of the past policy of some carriers in this regard. To mention one class of items among many, certain fees for legal services in proceedings before us seem greatly out of proportion to the value of any service that could possibly have been rendered in those matters. There is no reason to believe that excessive payments are confined to such litigation.

The questionnaire above mentioned did not call for information respecting payments of salaries or special compensation to the officers of the carriers. Many of the salaries paid railroad executives were questionable even during the period prior to 1930, and in some instances the change in circumstances of the carriers beginning with that year was not promptly recognized. An outstanding instance is that of the payment by one carrier, since placed in receivership, to the chairman of its board of directors, as salary and as fees for special service, of an amount aggregating about $213,000 for the single year 1930.

Our Bureau of Statistics has prepared from the annual reports of the class I steam railroads information regarding the salaries of railroad officials for the year 1933, which has been made available to the public. There has been during the past four years a general readjustment of salaries of railroad executives and other railroad officials, substantially reducing this item in the operating expenses of the carriers.

Passenger Fares

Since the general rate and fare increase of 1920, the basic passenger fare in the country has been 3.6 cents per mile. Because of the inroads upon passenger traffic made by the motor bus and the private automobile, intensified by the depression, many railroads have experimented with reduced fares. The general revenue results from these experimental fares **and**

charges will no doubt be fully developed in the proceeding hereinafter referred to.

We are advised, although not officially, that a number of the carriers in official territory are willing, experimentally, to make reductions in passenger fares and to eliminate the Pullman surcharge, but that because of the attitude of some of the larger roads no action in that respect, either as to the passenger fare or the Pullman surcharge, has been taken.

In our last report we said that with the constant decline for the last 10 years or more, both in the number of passengers carried and the gross revenue from that business, together with the constant increase in the number of passengers carried by other agencies of transportation, it seemed that the time was at hand when some aggressive action should be taken by the carriers to determine the possibility of regaining passenger business and relieving to that extent the users of freight service from the burden of unprofitable passenger service. Nevertheless, the passenger situation on the respective railroads throughout the country is substantially the same as it was at the time of our last report.

With the object of determining what, under the law administered by us, can and should be done in that respect, in June of this year we instituted an investigation, entitled Docket No. 26550, *Passenger Fares and Surcharges*, into the lawfulness of the passenger fares and Pullman surcharges maintained by all common carriers by railroad subject to our jurisdiction. Hearings in this proceeding have not yet been held for the reason that, in the interest of economy of time and expense to all concerned, it is desirable that we avail ourselves of the voluminous data in respect of passenger service, fares, and costs and Pullman service, charges, and costs, which are being assembled and compiled by the Federal Co-ordinator of Transportation, and which will not be available until about the end of this calendar year.

Delegation of Authority

In our last annual report in general terms we stated the extent to which we had taken advantage of the permission given by the new section 17 (6) of the act, to assign particular functions and work to individual commissioners. In general, that delegation still stands, but slight modifications have been made.

The various functions, the individual commissioners to whom the work was assigned, and the number of instances where this authority was exercised since our last annual report are shown below:

	Number of orders issued
1. Special permissions or other permissible waiver of rules regarding schedules of rates under section 6 (3).	
By Commissioner Aitchison	9,271
By Commissioner Porter	700
By Director Bureau of Traffic*	250
2. Applications under section 20 (11), as to released rates.	
By Commissioner Aitchison	12
By Commissioner Porter	3
By Director Bureau of Traffic*	1
3. Matters arising under Ex Parte No. 13 with respect to tariff files.	
By Commissioner Aitchison	53
By Commissioner Porter	4
4. Distribution of carrier accounts and the spreading of items over periods of time, under section 20.	
By Commissioner Eastman	65
5. Uncontested matters relating to the transportation of explosives and other dangerous articles.	
By Commissioner McManamy	1
6. Applications for authority to hold the position of director or officer of more than one corporation, when the corporations are all part of the same system, under section 20a (12).	
By Commissioner Meyer	42
7. Applications and complaints on the special docket.	
By Commissioner Tate	5,371
8. Applications for admission to practice before the Commission.	
By Chairman Lee	17
9. Matters arising with respect to reduced rates in case of calamitous visitation under section 22 (1).	
By Commissioner Aitchison	52
10. Consideration and disposition of merely procedural matters in any formal case or matter including extensions of time for compliance with orders.	
By Commissioner Aitchison	72
By Commissioner Porter	11
By Commissioner McManamy	1
By Commissioner Tate	5
	Number of cases where no order was required
11. Reference of cases involving supposed violations of law to Department of Justice for investigation and possible prosecution.	
By Commissioner Porter	17

* During the absence of Commissioner Aitchison this authority was delegated to the Director of the Bureau of Traffic.

Bureau of Inquiry

During the year more than 200 investigations were made for the purpose of (a) enabling us to perform our statutory duty of enforcing the criminal and penal provisions of the act and related statutes, (b) obtaining information for presentation at hearings in formal investigations instituted on our own motion, and (c) keeping us informed of the manner and method in which the business of the carriers is being conducted.

Many of such investigations disclosed practices which had been resorted to by carriers or their agents and by shippers for the purpose of defeating published rates and otherwise granting or obtaining concessions and discriminations.

One of the devices employed by carriers to favor important shippers was the granting of the use of valuable property for long periods without the collection of rental therefor. For this offense indictments against one carrier and three shippers were returned, and one of those shippers has pleaded guilty and paid a substantial fine.

Numerous abuses growing out of the warehousing and storage of property by carriers have been disclosed by our investigations.

Another method of favoring shippers which was disclosed by our investigations was the extension of credit for freight charges for long periods.

Certain practices of shippers which were alluded to in our last report still persist, such practices being the filing of false loss and damage claims on shipments of perishables, and the furnishing of false reports of weights. A number of indictments based on these practices were returned, and in several instances sentences of imprisonment were imposed upon conviction after trial or upon pleas of guilty.

It is apparent from our investigations that there is a more or less widespread policy among carriers of employing trucking concerns to perform for them terminal services which the carriers by means of their tariffs hold themselves out to perform for shippers. In certain instances it has been found that the payments made by the carriers for these trucking services are so substantial as to induce the trucking companies to perform for shippers, either free or at charges which otherwise would be unremunerative, additional trucking services which are not provided for by the carriers' tariffs. The effect of this is that such favored shippers receive concessions in respect of their interstate shipments which, though granted directly by the trucking companies, in fact flow from the carriers and out of the payments which they make to the trucking companies. This practice constitutes a striking illustration of the opportunities for violating the statute by means of devices which are commonly available where the same person or company acts in the dual capacity of agent for carrier and shipper.

Bureau of Locomotive Inspection

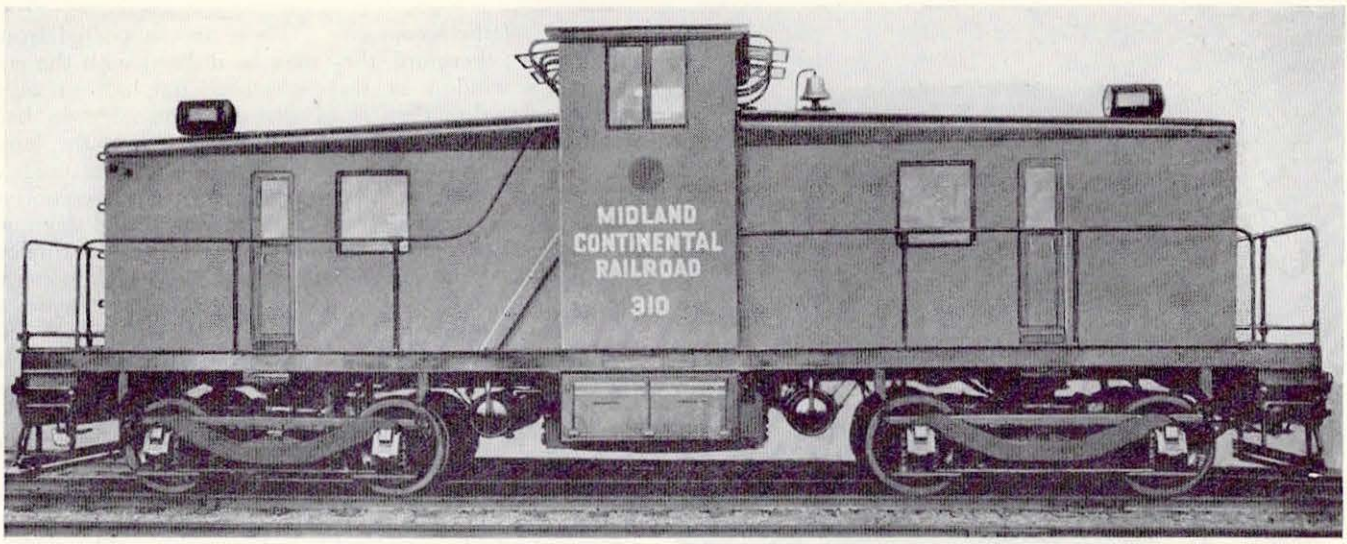
The work of this bureau is shown in detail in the report of the Chief Inspector, published separately. Except as otherwise stated the report here made is for the fiscal year ended June 30, 1934.

A summary of all accidents and casualties to persons occurring in connection with the operation of steam locomotives compared with that for the previous year shows an increase of 22.3 per cent in the number of accidents, a decrease of 12.5 per cent in the number of persons killed, and a decrease of 12.9 per cent in the number of persons injured.

During the year 12 per cent of the steam locomotives inspected by our inspectors were found with defects or errors in inspection that should have been corrected before the locomotives were put into use, as compared with 10 per cent in the previous year and 8 per cent during the year ended June 30, 1932.

The increase in the percentage of locomotives found defective was due to the action of the railroads in drastically curtailing their maintenance forces over the period affected and, in general, performing only such work as appeared to them to be immediately necessary for the time being. Because of the accumulated wear of major parts which would otherwise have been restored currently, the effect of this policy was to produce a considerably greater recession in the condition of locomotives over the two-year period, and especially for the year just passed, than is indicated by the increase in the percentage found defective. As compared with the previous year, there was an increase of 38.6 per cent in the number of locomotives ordered withheld from service by our inspectors because of the presence of defects that rendered the locomotives immediately unsafe, an increase of 31.3 per cent in the total number of defects found, and increases in individual items found defective ranging from 3 to 149 per cent.

Boiler explosions or crown sheet failures continue to be the most prolific source of fatal accidents.



Westinghouse 65-Ton Diesel-Electric Locomotive Built for the Midland Continental

Diesel Road Locomotive for the Midland Continental

Westinghouse 65-ton, 530-hp. double power plant locomotive embodies light weight construction and has available 8.15 hp. per ton of weight

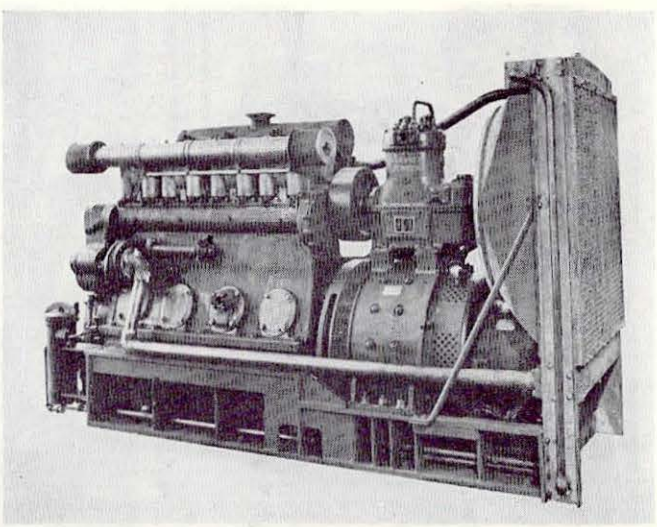
By G. A. Macdonald
Westinghouse Electric & Manufacturing Co.

THE Midland Continental, with headquarters at Jamestown, N. D., has just placed a 65-ton 530-hp. double power plant Diesel electric locomotive in road service between Frazier, Jamestown and Edgeley. This road operates 72 miles of main line track in North Dakota, having important connections with the Northern Pacific; Chicago, Milwaukee, St. Paul and Pacific; and Minneapolis, St. Paul and Sault Ste. Marie.

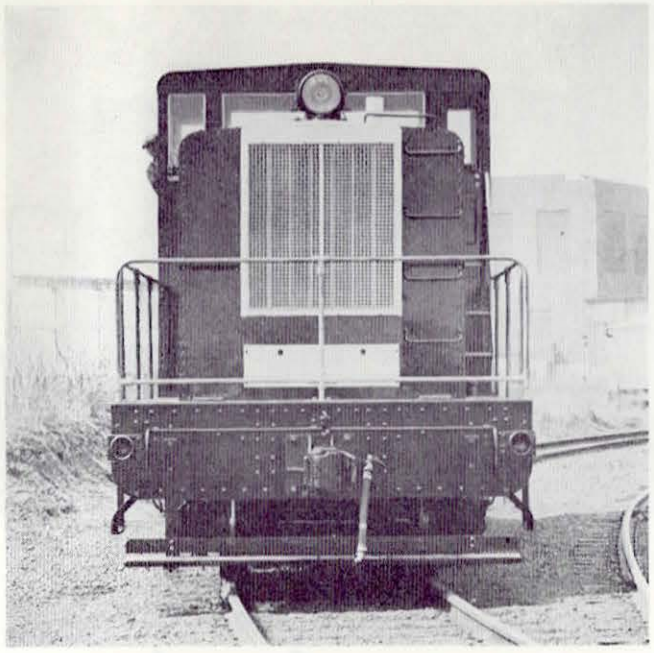
This locomotive is powered with two four-cylinder 265-hp. Westinghouse Diesel-electric power plants, including Westinghouse motors and control. Differential control has been used for the traction motors. A direct-connected mechanical driven compressor insures a satisfactory air supply. Provision has been made in the control system to provide a continuous battery charging rate during power periods only. This was so designed because the locomotive will be operating 90 per cent of its time in road work with few engine idling periods such as are encountered in switching movements.

Mechanical Features

The cab superstructure is of welded construction with the engine room sections bolted to the operator's compartment, the material being copper-bearing sheet steel. This material was selected due to its high resistance to acid air conditions which are prevalent in railroad yards. The design is a standard Westinghouse visibility center type cab which offers maximum visibility in all directions. The low height and narrow width of the engine permit the combination of two very desirable features, namely, engine room maintenance facilities and increased visibility. The engineman can look over the



Westinghouse 265-hp., 9-in. by 12-in. Four-cylinder Engine, Generator, Compressor and Radiator, Making a Complete Power Plant, Mounted on a Common Bedplate



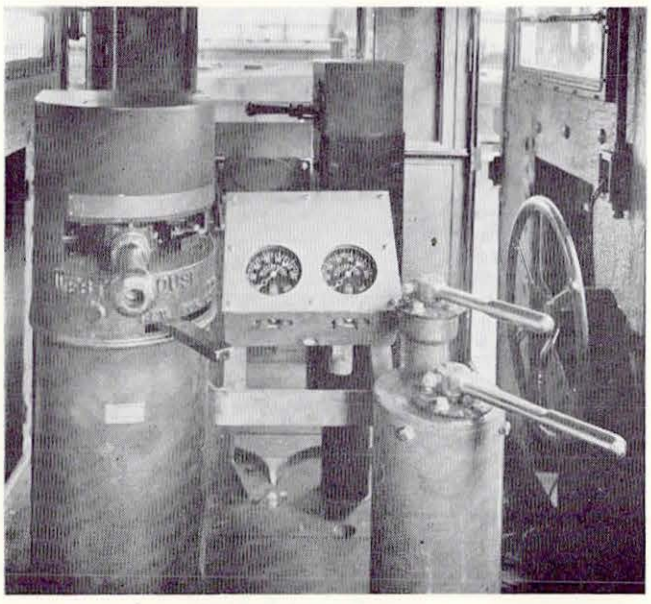
Front View of the Midland Continental Locomotive

engine room hoods as well as around them. The engineman can at all times keep his eye on gages and meters as well as watch for ground crew signals. Also in stormy weather he is not exposed to the elements. Air operated window wipers keep clear vision on operating windows.

Wooden sashes tend to swell and become inoperative in wet weather. This locomotive has aluminum window sashes which resist rust, eliminate binding and deterioration.

An abundance of room has been provided around each engine and generator. Two doors give entrance to each engine room. This gives four entrances, two from each side. Aisles are provided around three sides of the engine. These aisles are 20 in. in width and run the length and width of the engine room. The height of the engine room roof over the engine is 19 in. This is sufficient to permit removal of pistons, connecting rods or cylinder liners within the engine room.

Arm rests are provided at the engineman's window on each side of the locomotive. These are supported from the outside; therefore, they may be utilized with the engineman's window at three-quarters, one-half or one-quarter closed. This is of distinct advantage in bad weather when the engineman desires to close the window partially and still retain this comfortable feature.



Controls in the Cab as Viewed when Sitting at the Engineman's Station

Sand boxes are welded integral with the locomotive frame to give water tightness. This keeps sand dry and free running. The fuel tank is of welded construction and bolted to the locomotive frame beneath the operator's cab. Ample space is available for easy removal of the cover to permit cleaning the fuel tank which has 320 gal. capacity. It is so designed as to permit ample capacity and yet leave sufficient space on ends and sides for a compact arrangement of battery boxes and air tanks. The battery boxes are mounted on each side and the air tanks at each end of the fuel tank.

The body, center pin and truck frame bolts are tapered and driven into reamed holes to insure a permanent alinement which considerably reduces wear. The underframe is all-welded construction with engine room hoods and operator's cab securely bolted to it. The two swivel trucks are of conventional design with frames of rolled steel and forgings. Two railway traction motors, one geared to each axle, supported by nose suspension from the bolster, are mounted on each truck.

Two Westinghouse Master Series Type 4-F-1, four-cylinder 9-in. by 12-in. 265-hp. Diesel engines serve as the prime movers. A Westinghouse 500-volt 182-F-2 generator is direct-connected to the engine and mounted on the same bedplate. A Westinghouse type YG-16-F-2 auxiliary generator is mounted on the main generator shaft. Each engine with its muffler, generator, radiator, compressor, lubricating oil sump and oil filters forms a compact, independent power plant mounted on a common bedplate. There are no chains, belts or excess piping. The complete power plant is removable as a unit through the end of the locomotive, and complete removal can be accomplished in four hours.

Principal Weights and Dimensions

Tractive force, starting	39,000	lb.
Tractive force, continuous at 10.4 m.p.h.	14,000	lb.
Maximum safe speed	40	m.p.h.
Length inside knuckles	40 ft. 4	in.
Width overall	10 ft. 2	in.
Height over all	14 ft. 2½	in.
Wheel base, truck	7 ft. 0	in.
Wheel base, total	29 ft. 4	in.
Diameter of wheels	36	in.

There are four type 571-DP-6 motors especially designed for this type of service with low motor losses at high tractive effort values. Uniform tractive force is assured. In case of emergencies, four motors may be driven from one generator. Normally, one generator drives two motors.

The air compressors are Gardner-Denver, Class AA, duplex water cooled, direct drive, displacement 74 cubic feet per minute each at 900 engine r.p.m.

Control Equipment

Dual contral stations are provided in the operator's cab. This is an excellent advantage from the viewpoint of safety and flexibility of operation. The two master controllers and air brake stands are interlocked by a linkage beneath the operator's cab floor. A movement on one is duplicated on the other. If the ground crew finds it necessary to change to the opposite side of the train, the engineman does not need to stop the locomotive and lose tractive force as well as time; he simply changes to the opposite control station where he finds his controls in exactly the same position as he left them on

the other side. This feature saves time, operating cost, and is an excellent safety feature. Many operations have physical obstacles which make this feature invaluable.

The air brake equipment is Westinghouse 14-EL straight and automatic with interlocked dual-control stations.

The engines are started by a 64-volt, 32-cell, 204-amp.-hr. Exide Ironclad locomotive battery. Starting facilities are provided at each engineman's station and in each engine room. Headlight switches are also placed at each engineman's station. All control functions, including horn, bell and signal lights, are operated from each control position.

Water and lubricating oil temperatures of the engines are indicated by temperature indicators as a guide for the operator. Young Radiator Company's vertical double frame type radiators are used with four divisions of channels for water and three for lubricating oil.

Report on Crugers Collision

THE Interstate Commerce Commission has issued the report of W. J. Patterson, director of the Bureau of Safety, on the rear collision of passenger trains on the New York Central, at Crugers, N. Y., at 10:40 p.m. on the night of August 31. It says that the collision resulted in the death of one employee and the injury of 295 passengers. (The newspapers at the time reported only 5 passengers as seriously injured.) This collision attracted unusual attention because of the location, on a line of very heavy traffic, and, of other circumstances, and its nearness to New York City.

This line, four-track, has complete automatic block signaling and the locomotives of the trains were equipped with automatic train stops of the intermittent induction type. The block sections in this region are about one mile long. The collision occurred on a curve to the right of 2 deg. 46 min. The trains were on track No. 1 and the view of the engineman was restricted to about 820 ft., because of the presence of another train running in the same direction on track 3, at the right of track 1.

Northbound passenger train No. 71, first section, 9 cars, ran past caution and stop signals and collided with the rear of northbound train No. 29, fourth section, 11 cars. Train 71 had left Croton-on-Hudson, three miles back, six minutes behind the leading train, and had encountered caution signals at each block. The collision was about 150 ft. beyond signal 3741 which to No. 71 indicated stop. The leading train had been stopped at this point because of the engineman's failure to operate the forestaller at that signal (the indication being caution); but it had just begun to move again. The engineman of the second train had encountered caution indications at signals 3541 and 3641, and had forestalled, but he did not sufficiently reduce the speed and he passed signal 3741, indicating stop, at about 23 miles an hour, this figure being taken from the speed recorder with which the engine was equipped.

The leading train, after having been stopped, was started only after the slack had been taken twice. The flagman of the leading train gave stop signals to No. 71, but said that none of his warning signals were acknowledged. The engineman of No. 71 said his view was impaired not only by the presence of second 71 on his right but also by a freight moving in the opposite direction on his left, which emitted some smoke and steam. He said that he had been "running on the yellow" and expected to find a yellow indication at signal 3741. The fireman of this train had thought the speed was "a little high," but he also had thought that the engineman was going to slacken enough to stop at signal 3741.

The report, placing the responsibility on Engineman Cummings of No. 71, cites the rule requiring speed to be reduced to at least 30 miles an hour when encountering a caution signal, the rule also providing that the engineman may forestall only after the indications have been observed, and are being obeyed. The speed recorder showed that the train had been moving at 43 miles an hour at signal 3641 and at 38 miles an hour when within one-half mile of signal 3741.

The report lays emphasis on the importance of strict observance of rules when "running on the yellow" and on the importance of the forestalling feature. The collision is said to be very similar to one which occurred at Danville, Ind., in April, 1933, and one at Camp Douglas, Wis., in February, 1931, is also cited.

If supervising officials are unable to secure better practice in forestalling, says the report, further consideration should be given to the question whether forestalling devices shall be continued in use.

The report lays no specific blame on any person but Engineman Cummings. It does not appear that he was very critically cross-questioned, nor is there any information about his past record or other antecedents. The report observes that in situations like that here under consideration—where a road has a complete automatic train control system, but (as is allowable under the government regulations) allows the suspension of its function when a train is running at reduced speed—several accidents have already occurred, indicating that the everyday practice, in this suspension of a safety function, has not been properly supervised.

Marine Borer Attack Increases Along the New England Coast

(*Continued from page 12*)

but as we go south, the picture changes entirely, and while we find some indications of limnoria, we find heavy attacks from teredo. Until 1931, no trace of either limnoria or teredo had ever been found in Plymouth harbor. During the last three years, however, the picture has changed, and it is now difficult to find any wood which has not been injured by one or the other of these borers. Spar buoys marking the channels have been destroyed by teredo in two years time, in an attack as severe and as rapid as any to be found in badly infested southern waters.

On the test boards along the southerly side of Cape Cod, in Buzzards Bay, and at Nantucket and Marthas Vineyard, practically no limnoria have been found in the test blocks as yet, but in most cases we are finding very heavy teredo attacks, and in some cases the blocks have become fairly well riddled at the end of two months. In Narragansett bay, we are finding both limnoria and teredo, the teredo attacks being especially heavy at Fall River and Tiverton, R. I. Very little attack is being found as we reach Providence, R. I.

There has as yet been practically no attack from either limnoria or teredo along Long Island sound, as far west as Norwalk, Conn., except for a late attack of teredo at Guilford, Conn., and at Norwalk, as shown by the last blocks removed late in August.

Our records thus far of marine borer activity along the Maine coast seem to agree with the conclusions

reached in the 1922 investigation—"That limnoria may be found along the Maine coast and may be particularly heavy in Portland harbor."

Thus far, our records indicate also that between Portsmouth, N. H., and Provincetown, Mass., the conclusion reached in 1922—"that with the exception of Portsmouth and at Provincetown, Mass., there were no indications of attacks of any importance"—agrees with our findings as far south as Boston harbor. However, from Boston harbor to Cape Cod, we find that there has been a very heavy increase in limnoria and teredo, and that in this section very heavy damage is being done to marine structures. A New Haven test board at Provincetown showed teredo in the second month.

Our records indicate a vast change from the conclusions reached in 1922 in-so-far as Boston harbor is concerned. While at that time it was felt that the limnoria attack, while not heavy at any point, might cause destruction in time, we now know that it is very heavy, and that it has caused and is still causing heavy damage. Results here indicate, as was found in 1922, that while teredo are present in the harbor, there is as yet no indication of serious damage.

While the 1922 report states that marine borers might attack timber construction in Buzzards and Narragansett bays, our records to date show a very heavy attack, principally from teredo, and that much more severe destruction is going on than could have been anticipated in 1922. Along Long Island sound, conditions do not appear to be much different from those found in 1922.

Communications and Books . . .

New Deal Critics Who Champion Special Privilege

CINCINNATI, OHIO

TO THE EDITOR:

I cannot forbear expressing my keen satisfaction over your timely and penetrating editorial in the *Railway Age* of September 15*. You have blown the froth off an anomalous situation that has been aching overlong for such a pillory. To my thinking you have incidentally laid bare just a particular manifestation of the major factor hindering recovery in the large—bad ethics in intrigue with strained logic which, as it is uncovered, reveals the ugly face of unpatriotism.

When supposedly enlightened minds employ their prestige as obviously and deliberately to further the ends of such exploitation how can we expect from those less advantaged intelligently a loftier procedure?

How two powerful newspapers can sell what souls they have for such a mess of pottage is beyond me because I know and you know that they know how fundamentally wrong they are. You generously call it "inconsistent," but after all are they not in the last analysis of their motivation too tragically consistent?

What will the taxpayers of this country not tolerate! What a time for some Moses, some Lincoln to rise up and save this nation once again!

Carry on. Maybe you are the man. Maybe the patriotism of this country is about ready to awaken and rise in its might.

A TAXPAYER.

[*The editorial referred to was entitled "The Old Dealers and the New Dealers." Its theme was the inconsistency and ineffectiveness of criticism of New Deal policies on the part of interests which continue to favor subsidies and special privileges as long as they are on the receiving end.—Editor]

In Defense of Railway Unions' Policies

ST. LOUIS, MO.

TO THE EDITOR:

In a recent issue of *Railway Age* appeared, under the head "Communications," a letter from one signing himself "Consulting Engineer," titled "What Are Unions—Brood Hens or Birds of Prey?"

May we have space in which to set out more clearly the "philosophy" animating the writer of the letter, and to note the inevitable outcome of the policies he advocates? With the "examples" he sets forth as to what he considers evidence "wastefulness" and "unfair practices," a detailed answer is not necessary. Anyone can cite "happenings," the creation of their own imagination; give no exact time or place of such happenings and thereon build an "argument," which a presentation of the actual circumstances, freed of bias and a desire to bolster "your own side," would destroy.

Many and varied are the charges made against unions, based upon pure prejudice and a desire to misrepresent. We have noted many such given wide credence by those who knew such charges were without foundation in fact, and it has become a matter of course with railroad workers and their unions to ignore them, knowing that as fast as one misstatement was proven to be a misstatement another would immediately follow.

However, when the whole letter and the position of the writer is considered, there necessarily emerges the fact that the philosophy behind it all is that of the bird of prey.

Note how enthusiastic the writer is over the fact that he put man against man and is proud of the fact that out of that conflict he was enabled to provide a greater profit for the owners; how he, carelessly indifferent to what happened to those displaced as the result of his alleged efforts, placed men in bread lines, failing to understand that for every man so made superfluous there was, and is, a potential and actual loss of traffic to the railroads. He overlooks the fact that since 1920 "economy" has been the watchword of officials of railroads and that, as a result, the number of employees has been reduced to such a degree that they number about one-third of those employed in 1920. Surely an "economy" that resulted in separating two-thirds the number of employees from their jobs in 14 years was of enough importance for the writer to note. It may be, though, that he was too modest to claim he was responsible for all that.

The year 1926 showed the roads handling the greatest amount of traffic in their history, and that was done with less than two-thirds the number of employees shown in 1920. The writer should have noted that fact, but he does not, feeling, perhaps, he might be accused of boasting had he done so.

The main characteristic of a bird of prey is brutal and ignorant carelessness as to what happens to its prey. All it knows is that its maw must be filled regardless of what happens, and we submit that the writer of the letter, in his boast of how many men he had gotten rid of—his seeming inability to understand the suffering he was causing—displays the bird-of-prey characteristic.

May it also be noted that, while the railroads have been practicing "economy," they have only followed the practice of all industry in that, seeking only profits, they have steadily gotten rid of employees in all lines of endeavor; cut down the ability to sell their services and goods and, in so doing, to the same extent circumscribed their ability to achieve the desired profits.

Having gorged themselves on victims, they have so reduced the number that they now must perforce go hungry, as the result of following the procedure laid down by "Consulting Engineer."

A union is the antithesis of the bird of prey. It is to protect

men, not hurt them, as is shown by the record of the years. Railroad unions have been the sponsors for every device and method in use today for the safety and protection of employees and the public, and the record proves that every time the organizations of labor advocated those devices and methods they were met with the bitter opposition of those who sign themselves "Consulting Engineer."

Railroad unions were created in order to protect men from the beast of prey and are functioning to that end today, as witness the latest efforts to protect—and not harm—the Amended Railway Labor Act and the Railroad Retirement Act.

Where is the beast of prey that does not, preferably, seek out the young and the aged, both more helpless than the vigorous and full grown, not yet enfeebled by age? That is a characteristic universal in birds of prey and utterly lacking among real humans and all decently inclined people.

Railroad unions are in the forefront of all movements to abolish *lex talonis*—the law of tooth and claw—and to institute a society in which the good of the many shall be the supreme law. The "Consulting Engineer" is one who desires *lex talonis* as the supreme rule of conduct, thereby answering his own questions and proving that unions are not birds of prey. What he and those he speaks for are we leave to his own consideration.

ARTHUR KEEP,
Editor, the Railroad Telegrapher.

A Letter from Mr. Fljozdal

DETROIT, MICH.

TO THE EDITOR:

In the July 21, 1934, issue of *Railway Age*, page 76, appears an article bearing the title, "What Are the Unions—Brood Hens or Birds of Prey?" The glaring injustice and the apparently deliberate falsehoods appearing in this article, signed by "Consulting Engineer," are of such a nature as to justify, in fairness to the railway brotherhoods, a reasonable amount of space in your publication for a reply, which reply, incidentally, bears our signature and is not covered with the secrecy surrounding that above referred to.

In the first paragraph of this article your undiscovered and unadvised adviser, after first acknowledging his limited knowledge of schedules, proceeds to state that he has been unable to find a single paragraph in any of these schedules that suggested economical operation, and adds that, on the contrary, if they were written with the sole object of destroying railway business, and increasing the cost of it, they could not be more effective than the ones now in force. Apparently he overlooked, among other things, the seniority rules contained in all railway employees' agreements. It is well known by all railway managements that the operation of these seniority rules promotes economy, increases efficiency, develops regularity of employment, and helps save the railroads from the many evils that arise out of individual instances of discrimination and prejudices practiced by representatives of management in other industries. Furthermore, he attributes but little intelligence to railway management, since the overwhelming percentage of existing schedules and rules have been reached and agreed to across the table in direct negotiations with the railways.

This mysterious maker of myths, signing himself "Consulting Engineer," in pointing out his limited number of horrible examples of trade union atrocities, fails to cite names, dates or places, except to mention that they occurred "some years ago," or "about forty years ago," etc. It is, therefore, impossible, in making this reply, to answer these so-called examples and we must permit them to retain the same safe degree of secrecy assumed by their modest discoverer. In a spirit of generosity we concede his modesty, although the pronoun, "I," appears no less than twenty times in his brief literary ambush.

Among other things, your obscure observer recalls that about forty years ago, when he was working on a western road, the president of which was trying to get votes to make the road's headquarters town the capital of the state, a steam shovel was shut down and men were employed to load ballast. If the president of this western road adopted this means of bribery to achieve his political purposes, we fail to see where the standard railway labor organizations are in any way responsible. This is particularly true, in view of the fact that forty years ago the overwhelming majority of railway employees were denied their right as free citizens to join a labor organization and suffered prompt dismissal if found to be members thereof.

Your concealed consultant later in his article expresses his belief "in co-operation that necessitates unions," although still further along, in pointing out a plan of co-operation in Canada, he adds that in this co-operative system the men are not taxed to support autocratic labor leaders. Are we to assume from this that he believes in unions without leadership and, if so, what form of co-operation can possibly rise from such mob activity?

It is also significant that your "Consulting Engineer," with his self admitted knowledge of railroad affairs, is so well acquainted with the co-operative movement on the part of other employees in Canada and yet has no knowledge, or at least makes no mention, of the union-management co-operation program promoted by the Brotherhood of Maintenance of Way Employees and by the six Federated Shop Crafts on the Canadian National Railways. This union-management program, inaugurated by the organized railway employees, has been in operation for years and has been highly commended on various occasions by the official family of the Canadian National System.

Assuming the role of a fearless defender of the people, your unapprehended champion declares himself to be fighting "the false teaching of labor leaders," and in his secret boldness he adds, "I care not whether they be railway men, American Federation of Labor, I. W. W., Communists, Socialists, or what have you—they all teach the same doctrine, namely, get your name on the payroll for as much money as possible, do as few kinds and as little work as possible and thereby make more jobs for your fellow workmen. . . ." In this statement your undisclosed disclaimer is either guilty of a deliberate falsehood or else is guilty of an amazing and inexcusable ignorance of the subject with which he has attempted to deal. We say, without a moment's hesitation, that many prominent railroad presidents would instantly join with us in repudiating this slanderous utterance of your fighting contributor, who so effectively conceals his war-like identity.

In still another place your unknown consultant states that, "Wages is not a true measure of cost, but rather that the ratio of production to cost is a true gage." In this statement your writer's illiteracy is again illuminating. Let us see what the facts are. In 1929, when the carriers handled the greatest volume of business in their history, the number of employees had decreased 18 per cent, as compared with 1920. Their total hours worked had decreased by more than 20 per cent, and their compensation by more than 21 per cent. From 1920 to 1929 revenue freight ton-miles per employee increased 32.8 per cent. Revenue freight ton-miles per hour of service increased from 75.3 in 1920 to 102.9 in 1929, and continued up until it reached 111.8 in 1933. Revenue freight ton-miles per dollar of compensation increased from 111.4 in 1920 to 154.4 in 1929 and to 177.9 in 1933, an increase in 1933 of 59.7 per cent over 1920. Gross ton-miles per employee increased 56.1 per cent from 1920 to 1933 and gross ton-miles per man-hour increased 82.7 per cent. Gross ton-miles per dollar of employee compensation increased 96.5 per cent; and yet in 1933 the average earnings per employee had dropped 24 per cent, as compared with 1920. Total railway mileage had increased 7.9 per cent and the number of employees per mile was 2.4, as compared with 5.4 in 1920.

Fuel used in moving freight decreased 28.5 per cent and the average speed per hour of trains increased 52.4 per cent. The operating expenses per train mile decreased over 30 per cent. The number of loss and damage claims decreased better than 66 per cent and the loss and damage to freight per loaded car dropped better than 77 per cent. The cost of clearing wrecks fell off 91 per cent. The number of passengers killed declined by 90 per cent, and the passengers injured per million locomotive-miles fell 57 per cent.

This evidence of the output per railway employee, per hour of service and per dollar of compensation, could be continued, but sufficient is presented above to indicate how little your informer knows about the problems that he vaguely pretends to know all about. If ignorance is bliss, his article indicates he should be in a perfect and perpetual state of ecstasy.

Nothing need be said, of course, as to the cowardly and despicable aspect of an article that falsely attacks others and in connection with which the author, who presumably has a name, prefers to conceal his identity behind a title. There would also appear to be a serious question of ethics involved from the viewpoint of a national publication, such as *Railway Age*, that permits this, particularly when the editor of such a publication is in

position to know the injustice and inaccuracy of the charges made by his concealed consultant.

Webster's dictionary give several definitions of the word, "engineer," the first being, "One who designs or contrives; an inventor; also, a plotter." With this interpretation of the word, "engineer," in mind, it is not difficult to suspect the strong smell of company unionism emanating from his article. If we might venture a guess as to his actual identity, it would be that he is a consulting engineer, or inventor, or plotter of company unions, who has grown desperate in witnessing the recent crumbling of this industrial hypocrisy.

F. H. Fljozdal,
President, Brotherhood of Maintenance of Way Employees.

[In justice to "Consulting Engineer" it should be stated that he concealed his identity and that of the instances he mentioned only to avoid embarrassment to the railroads with which he has been connected. The "Communications" column of *Railway Age* is an open forum and the editors could not exercise censorship over the opinions expressed therein and retain the character of the department. Thus we welcomed "Consulting Engineer's" letter and we also welcome that of Mr. Fljozdal—without necessarily agreeing with the views expressed by either of them—Editor.]

New Books

They Built the West, by Glenn Chesney Quiett. 569 pages, 9¼ in. by 6 in. Illustrated. Bound in cloth. Published by the D. Appleton-Century Company, New York. Price $5.

This book dramatizes in interestingly readable style the accomplishments of the more spectacular of those rugged individualists who, during railroad-promotion era, fell upon the West to become fabulously rich in their own buccaneer fashion, but meanwhile opening up the country, developing its resources and building its cities. The author, describing his work in its sub-title as "An Epic of Rails and Cities," has adopted the plan of telling the story of the rise of cities in terms of the personalities of railroad promoters. In this connection the reader meets, among others, Palmer of the Kansas Pacific; Strong of the Sante Fe; Huntington, Stanford, Hopkins and Crocker of the Central Pacific; Durant and the Ames brothers of the Union Pacific; E. H. Harriman and James J. Hill. But, while thus giving his attention to those in the lime-light, the author does not forget to include an honorable mention for those at the bottom of the West's economic scale—"The men who sweated and struggled and worked for a pittance to build the West we know."

Not the least interesting feature of the book is comprised by its numerous illustrations—portraits of the persons and views of the localities which enter the story. It requires a three and one-half page index to list these fascinating pictures.

Government-Operated Enterprises in the Panama Canal Zone, by Marshall E. Dimock. 248 pages, 8½ in. by 5¼ in. Illustrated with Charts. Bound in cloth. Published by the University of Chicago Press, Chicago. Price $2.50.

The average citizen of the United States would perhaps be surprised if told that his government has for some time been operating ice cream, ice manufacturing and coffee roasting plants, a bakery, a cattle industry, an abattoir and dairy farms. But such have become the ramifications of operating the Panama Canal that these are but a few of the "fields afar" into which public administration has deemed it necessary to roam on the Isthmus. At the request of the Secretary of War, Professor Dimock has looked upon all this and, generally speaking, found it good. He accepts the status quo of government ownership and operation in the Panama Canal Zone as a necessary one for the performance of the work at hand and directs his study to ways and means of doing the required job more efficiently.

Much attention is given to the Panama Railroad Company, its functioning as a government-owned corporation and the interlacing of its activities with those of the Panama Canal. Both of these, Professor Dimock finds "are well-managed," and "present a record of government enterprise which is unexcelled in the national government of the United States." He warns, however, that because of the peculiar setting in which it finds itself, "it is impossible to hold up the Panama Railroad Company as a model for government-owned corporations." Nevertheless, with the railroad example in hand, he is sufficiently impressed with the advantages of the corporate form for the conduct of government business ventures as to include as a recommendation for "the constructive improvement which underlies all others" the formation of a single corporation to hold and operate all of the government's commercial facilities on the Isthmus, including the railroad. Other major recommendations are concerned with relations with Panama and suggested reorganization of the internal organization of the canal-railroad establishment.

Diamond Jim, the Life and Times of James Buchanan Brady, by Parker Morell. 286 pages, 9 in. by 6 in. Illustrated. Bound in cloth. Published by Simon and Schuster, Inc., New York. Price $3.

Diamond Jim Brady, though remembered best as a colorful character of New York's Broadway and a notorious gourmand, was also a star salesman of railway equipment and supplies—it was, indeed, his astounding successes in the latter connection which provided him with the financial resources he required to assume the former roles in the grand manner. Thus while this popularly-done biography is naturally concerned in the main with Diamond Jim, the Broadwayite, it nevertheless touches upon the high spots of his business career—his work on the New York Central; his first sales job with Manning, Maxwell & Moore; his association with Samson Fox, British developer of the Fox pressed steel car truck, and with the Pressed Steel Car Company; and finally his participation in the organization of the Standard Steel Car Company, of which he was vice-president in charge of sales.

One is disposed to wonder how Diamond Jim, seemingly preoccupied with lavish living and fantastic parties, found time for business. The author has no doubt provided the answer in his finding that "Not even his closest friends were ever able to determine where business left off for Jim and where pleasure began. By some strange alchemy not known to other men he mixed the two until his life became one homogeneous pattern, possessing some of the characteristics of each and all of the characteristics of neither." He usually spent ten months out of every year on the road and the other two in New York. While on the road he did a thorough job of market analysis—he was a keen and accurate observer and his reports "were a marvel of completeness," covering "the past, present and future needs of each particular rail system." Data for these reports Jim obtained from the friends he had made; and he made friends everywhere on the railroads from chief executives down to section foremen. In the company of the latter he would ride hand cars on visits to wayside tool shacks and there list such tools as were needed in order that he might concentrate his sales efforts thereon.

Generally speaking, however, as Mr. Morell puts it, Jim "depended more on large handouts than small hand cars," and the fact that he rarely failed to get his money's worth is repeatedly emphasized. He had discovered early in the game that a party was the easiest and quickest way to accomplish the necessary behind-the-scenes wire pulling; that men "are infinitely more amenable to reason once their senses have been satisfied"; that "railroad gentlemen could frequently be made to buy more of his wares at three o'clock in the morning than in broad daylight." Jim's methods "were not subtle, nor in the best of taste . . . But they were productive." Even his life-long activity as a collector and blatant exhibitor of diamonds the author finds to be less an idiosyncrasy than "a matter of clever personal advertising, exploited for strictly business reasons." The famous transportation set was the best-known of the Brady jewel collection. Jim paid $105,000 for that set, which depicted "every animal and every appliance concerned in the business of carrying men and goods." It held 2,548 diamonds, 19 rubies and 4 olivines.

Yes, Diamond Jim, throughout the 'nineties and the first decade and a half of the present century, was indeed what the author calls him—the Halley's comet of New York's Broadway. Other spectacular characters of his time attracted momentary attention but their tenure was short—"only Diamond Jim remained constant and secure."

Odds and Ends . . .

Royal Railroader

King Boris of Bulgaria, who has received previous mention in these columns as an ardent railroader, added new honors in this respect recently. King Boris risked his like to save an engineman from death in his burning locomotive, and then himself took the throttle to bring the train more than 100 miles to Varna. The king left his special car, attached to the train, when fire broke out in the tender. The engineman's clothes were aflame. The king unhesitatingly climbed into the cab and pulled the burning garments from the man's body. After arranging for medical care for the seriously injured engineman, Boris took the driver's place and drove the locomotive the rest of the way into Varna.

Right of Way Horticulture

Apple trees occur frequently among the number of fruit trees planted along the German railway lines, with pear, plum and cherry trees as the next favorites, but quince trees have been planted on many embankments with great success. The product of the fruit trees is auctioned each year to the personnel of the railway. The embankment affords such extensive space for bee-hives that it is no wonder that so many railway employees have become enthusiastic bee-farmers. Recognizing the utility to the nation of all these subsidiary occupations, the German State Railways have consistently pursued the policy of assisting and promoting them by giving facilities for the transport and supply of agricultural and farming accessories.

Oscar—Railroad Dog

For five years, Oscar, a small white dog of undetermined ancestry, has made his home in the midst of the busy Illinois Central suburban yards in Chicago. Oscar was abandoned there as a pup when a Mexican labor camp moved out, and there he has been ever since, fed by many railway employees. He even has the luxury of a hot breakfast every morning, warmed on the locomotive boiler by Mike Tomatz, switch engineer. The strange thing is that Oscar will permit no one to get near him, not even Mike, his breakfast chef. He is indeed a hermit and completely untamed. Wild as he is, he has never wandered from the yards. In his years of dodging the speeding electric trains, Oscar has had two or three companions, other mongrels who happened to wander into the yards and stay, but none of them has had Oscar's train-dodging ability, and, sooner or later, have met death under the wheels of a train.

A Close Estimate

To estimate within 1168 ten thousandths of a mile the exact distance traveled by three miniature railway trains in the Illinois Central System exhibit at the 1934 Chicago World's Fair is the accomplishment of Herman Kiel, 71-year-old carpenter of Sioux Center, Iowa. For twelve hours each day the little trains raced around the Illinois Central exhibit. Sealed meters counted the miles. When opened at ten o'clock on the night of the last day of the Fair it was shown that the total mileage of the three trains was 8,042.9478. Mr. Kiel's estimate was 8,042.831 miles. Of the 28,247 persons who registered estimates during the 159 days of the Fair, eleven submitted estimates that were within four miles of the actual distance traveled by the little passenger, fast freight and freight trains. To Mr. Kiel and ten others who most nearly computed the exact mileage, the Illinois Central made complimentary cash awards.

Public Enemy No. 1

An interesting and amusing instance of the various ways in which the South African Railways and Harbors serve the public, particularly the farming community, is contained in the following copy of a note handed to the driver of train No. 1400 at Mevamphlope, on the North Coast Line, on 10th August, by a farmer resident at Nyoko: "Will you oblige by whistling like hell as you pass through the farm in the hope of lifting the locusts. Thanks." The driver acceded to the farmer's request and, from the latter's point of view, the ruse was quite successful. All the locusts took flight as the train roared through the farm, whistling continuously. They had their revenge on the driver, however, for the swarm settled in a railway cut a few miles ahead and the train was delayed several hours on account of the engine wheels being unable to grip the rails.—South African Railways and Harbors Magazine.

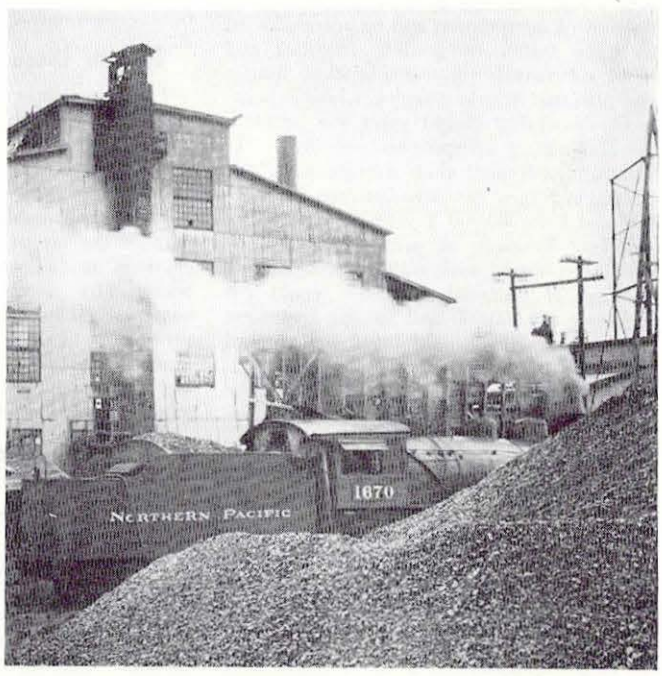
Beddy-Bye

A serious-minded traveler came back from Germany last week and called on us as soon as he got settled, because he could hardly wait to tell us about the most interesting thing he saw over there. It was in the Deutsches Museum in Munich, and he thinks everybody should know about it. It seems that, at some time or other, the Pullman Company presented the museum with a replica in miniature of a Pullman sleeper. It is neat and shiny and realistic and is politely named Muenchen. A portion of one side has been omitted to show the interior. Here one section is made up, its curtains open to reveal the berths, complete with tiny blankets, sheets and pillows. Being conscientiously thorough, the Pullman Company has included the figure of a gentleman, meticulously done to scale and him the officials of the museum have tidily tucked into the upper. Only his black face and porter's cap show.—The New Yorker.

Editor's Note.—Since the New Yorker printed this piece, we are now informed that the conscientious curator of the Deutsches Museum has had the porter removed from his upper and that he now stands ready to give service with a smile—in effigy.

Railway to the Rescue

Hungry families and unheated homes was the prospect for thousands in Tacoma, Wash., a few days ago until a Northern Pacific locomotive was called into unique service. A terrific windstorm which swept the Pacific Northwest crippled the Washington Gas & Electric plant, when a 100-foot stack was blown down, making the generating plant inoperative and resulting in a



The Northern Pacific Aids Tacoma's Housewives

shortage of gas for heating and cooking. Gas company and Northern Pacific operating officers went into conference and the locomotive was brought to the back-door of the plant and the necessary steam to make gas was furnished by the stationary engine after pipe-lines for carrying the steam into the gas plant were rigged up in a hurry.

NEWS

Railroads Face U. S. Ownership, Says Craven

Public ownership of railroads would entail many hazards but the United States may be forced to chance those hazards if consolidations and co-ordination of facilities fail to free the roads from the burden of competition, said Leslie Craven, counsel for the Federal Co-ordinator of Transportation, in a paper which he prepared and which was read at a section of the American Economic Association at Chicago on December 28. The railroad problem, he maintained, is fundamentally one of human relationships, resting on antagonisms to the carriers which arose half a century ago in the grange movement. These antagonisms, he said, have profoundly affected railroad regulation. "In the United States we have concurrently and rigorously applied two theories of regulation to the railroads which are mutually contradictory. We have regulated them as a natural monopoly. At the same time we have enforced competition."

Mr. Craven contended that the reduction or abolition of competition between railroads and the regulation of their competitors would solve the railroad problem. Reduction of competition can be accomplished to some extent by pooling facilities and more extensively by consolidation into a few national trunk systems, while government ownership would solve the problem by eliminating competition entirely. "If railroads will pool their freight cars," he continued, "they can save between $75,000,000 and $100,000,000 a year. Pooling l.c.l shipment business, at present largely unprofitable, would save another $100,000,000, pooling of terminal facilities would cut expenses $50,000,000 and similar treatment of shop facilities would mean a saving of $60,000,000.

The Prince plan for consolidating the railroads of the country into seven systems would save between $300,000,000 and $400,000,000 a year, but, he pointed out, that consolidation can be accomplished only through government compulsion and recommended co-ordination and pooling. He called attention to the hazard of political spoilsmen invading the $26,000,000,000 railroad system under public ownership, as well as the hazard of legislative interference with railroad economics through the demands of blocs representing labor and agriculture. At the same time he held that efforts at co-ordination and consolidation failing, the United States may have to face those hazards.

"In this railroad world," he concluded, "we are in a transition from what is popularly called rugged individualism to that something which will emerge, possibly as a mere stage transitional, to something else. In this there will be a higher expression, in what form we do not know, of the inevitable proposition that the railroads of the country must be operated for the common good; that whatever finds its inspiration in the individual good to the detriment of the common good must fall away."

Commissioner Farrell's Term Expires

There was a vacancy in the membership of the Interstate Commerce Commission on January 1, as the term of Commissioner P. J. Farrell expired on December 31 without any announcement by the President as to whether he would reappoint Mr. Farrell or appoint a successor when the Senate convened.

Air Conditioning in Britain

The London & North Eastern of Great Britain is now employing a new type of air-conditioning apparatus which filters fresh air and delivers it to passenger cars at an even temperature and under such a slight pressure that there is an entire absence of objectionable drafts. L. N. E. express trains and certain new tourist trains are now fitted with this air-conditioning equipment.

English Discussions on Signaling

The Institution of Railway Signal Engineers (M. G. Tweedie, G. W. R., Reading, Eng., secretary) has issued its proceedings covering meetings from February to September of this year, inclusive. This thick pamphlet includes the proceedings of six meetings with papers and discussions on (a) railway signaling in Australia, (b) notes on centralized traffic control, (c) single-line switching-out problems, (d) the rule book and its relation to signaling and (e) a visit to signaling at Wembley Park. Also the annual summer meeting at Cardiff.

$138,614,630 Recommended For River and Harbor Projects

The annual report of the Chief of Engineers, U. S. Army, for the fiscal year 1934 includes a statement of amounts that can be profitably expended during the fiscal year 1936 for improvement and maintenance of river and harbor projects totalling $140,828,725. Subtracting from this $2,214,095 carried over from prior appropriations leaves $138,614,630 to be appropriated. During the fiscal year 1934 there were in force 969 projects, and active operations were in progress on 344 projects during the year. The amount expended on river and harbor works during the year was $153,149,798, of which $48,143,461 was for flood control.

Report on 1934 Operations of Panama Canal

Commercial traffic through the Panama canal during the fiscal year ended June 30, 1934, was considerably greater than in either of the two preceding years, according to the annual report of the Secretary of War. Comparisons with the fiscal year 1933 show that in 1934 there were increases of 23 per cent in number of transits, 25 per cent in net tonnage of vessels, 36 per cent in tons of cargo carried through the canal, and about 23 per cent in tolls collected.

The increase in traffic was reflected in almost all of the leading trade routes, an outstanding exception being that between Europe and the west coast of North America. The specific trade routes over which moved the greater part of the cargo shipped through the canal during the fiscal year 1934, were, in order of quantity of cargo: Between the Atlantic and Pacific coasts of the United States (intercoastal); between the United States and the Far East, including the Philippines; between Europe and South America; between Europe and Canada; between Europe and the United States; between the east coast of the United States and the west coast of South America; between Europe and Australasia; between the United States and the Hawaiian Islands; and between the United States and Australasia.

Vessels of the United States carried 46.8 per cent of all the cargo passing through the canal. The remaining 53.2 per cent was carried by foreign ships, those of Great Britain carrying 21 per cent, Norway 8.4 per cent, Japan 6.1 per cent, and the balance scattered.

Panama canal revenues from tolls, postal, and miscellaneous receipts amounted to $24,161,731, expenses $7,351,383; net $16,810,348. Panama canal revenues from other business operations amounted to $15,858,897, expenses $14,492,142; net $1,366,755. The total net revenues amounted to $18,177,103, an increase of about 50 per cent or $6,000,000 over 1933. This was due to the gain in tolls collected, coupled with a decrease in the expenses of operation brought about by temporary reduction in salary and wage scales under the economy act, and to a general retrenchment and curtailment of activities all along the line.

Panama Railroad revenues from its business operations amounted to $11,535,763, expenses $10,710,009; net $825,754. To this must be added interest, exchange and miscellaneous profit and loss items amounting to $454,430 resulting in a total net revenue of $1,280,184.

The combined total net revenues of both

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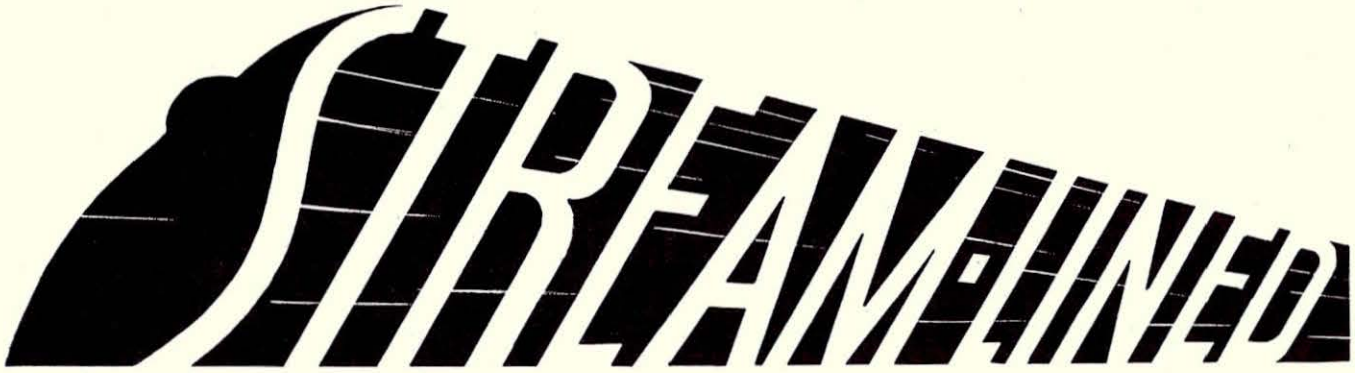

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Light weight, streamlined steam locomotives, designed on super-power principles, provide safety, high speed, comfort, hauling capacity, flexibility of train operation, and low cost.

There is no other source of power available that meets ALL requirements of high speed passenger service.

LIMA
LOCOMOTIVE WORKS
INCORPORATED

the Panama Canal and the Panama Railroad for the year from all sources amounted to $19,457,287.

For a number of years the Panama canal authorities have been seeking the enactment of legislation which would return to the President the control of tolls as originally intended, remove the existing inequalities in the treatment of shipping passing through the Panama canal, prevent further reductions in tolls by structural changes in vessels that reduce tonnage ratings without affecting to any material extent the cargo-carrying capacity of vessels, and incidentally reduce the work of measuring vessels and collecting tolls. The legislation sought in this connection is the abolishment of the dual system of measurement now required, and the adoption of the Panama canal rules of measurement as the sole basis for the levying of tolls. During the second session of the Seventy-third Congress the necessary remedial legislation was passed by the House of Representatives, but Congress adjourned before the bill could be considered in the Senate. Secretary Dern recommends that this legislation be enacted by the Seventy-fourth Congress.

N.R.A.A. Exhibit—A Correction

In the news item entitled "Many Companies to Participate in Exhibit at Chicago," appearing in the *Railway Age* of December 29, 1934, page 875, there was erroneously omitted from the accompanying tabulation a sub-head which should have read "Non-Exhibiting Members," thus setting apart as such the last 19 companies in the list.

Two Boat Trains for Hawaii This Year

Two boat trains will be operated by the Chicago & Northwestern, the Union Pacific and the Southern Pacific this year to connect with sailings of the S. S. Lurline from San Francisco, Cal., as compared with one train last year. Interest in Hawaiian travel has shown an increase this year and as a result, one train will leave Chicago on January 22, while the second will leave on February 6.

Eastman To Address Labor Organizations

The Railway Labor Executives' Association has called a meeting of railroad labor leaders to be held in Chicago on January 12 and 13. Joseph B. Eastman, federal co-ordinator of transportation, is to address the meeting on January 12, and further consideration is to be given to the legislative program on which the association has been working for some time.

$125,000,000 Apportioned For Federal Highway Aid

Apportionment of $125,000,000 for federal aid to the states in highway construction in the fiscal year beginning July 1, 1935, marking the resumption of the old policy of federal highway aid, was announced by Henry A. Wallace, Secretary of Agriculture, on December 27, under the authorization contained in the Hayden-Cartwright Act of June 18, 1934. Secretary Wallace, in making the apportionment, called attention to the possibility of reduction of a state's apportionment through the operation of the provision in the Hayden-Cartwright act relative to the diversion of gasoline taxes and other taxes on motorists. The act provides that federal aid for a state's highways shall be reduced unless the state uses for highways at least the amounts provided by law on June 18, 1934, for that purpose from the state's gasoline and motor vehicle taxes and other special taxes on motor vehicle owners.

Club Meetings

The Car Foremen's Association of Chicago will hold its next meeting at Hotel LaSalle, Chicago, on Monday evening, January 14. There will be a discussion on the new car interchange rules.

The Southern and Southwestern Railway Club will hold its next meeting at the Ansley Hotel, Atlanta, Ga., on Thursday, January 17, at 10 a. m. J. M. Hall, mechanical superintendent of the Cardwell-Westinghouse Company, will speak on draft gears.

Mid-West Board Meeting

The thirty-fifth regular and the eleventh annual meeting of the Mid-West Shippers Advisory Board will be held at Chicago on January 3. Besides the usual business program, officers for the ensuing year will be elected and M. J. Gormley, executive assistant to the president of the association of American Railroads, will deliver a special message, while O. C. Castle, director of the Section of Car Pooling, Federal Co-ordinator of Transportation, will explain the Co-ordinator's proposed car pooling plan.

Advertising Agents to Meet in Florida

The American Association of Railway Advertising Agents will hold its annual meeting in Orlando, Fla., on January 19-23. A tour of the principal points in Florida will supplement the annual meeting. Motor tours will include Haines City, Mountain Lake Park, Winter Haven, Tampa, St. Petersburg, Miami, Coral Gables, Palm Beach, and Lauderdale. A trip to Key West has also been planned. From Orlando, the convention will move to St. Augustine where, after a tour of the city, the party will break up on January 25. Members will be guests of various chambers of commerce.

Equipment on Order

Class I railroads on December 1 had 1,771 new freight cars on order, according to reports received by the Association of American Railroads. On the same day of 1933, 125 new freight cars were on order and on the same date two years ago, there were 2,398. The railroads on December 1 also had 23 new steam locomotives and 95 new electric locomotives on order. New steam locomotives on order on December 1, 1933, totaled one, and on the same date in 1932, there were three.

In the first eleven months of 1934, the railroads installed 22,951 new freight cars. In the same period last year, 1,874, new cars were placed in service and for the same period two years ago, the total number installed was 2,951. Forty new steam locomotives and 26 new electric locomotives were placed in service in the first eleven months this year. The railroads in the first eleven months of 1933 installed only one new steam locomotive and 37 in the corresponding period in 1932.

Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

Willard Sees Continued Improvement in Business for 1935

The year 1935 will bring a continuation of the improvement in business and more employment in the railroad field, according to the belief of Daniel Willard, president of the Baltimore & Ohio, as expressed in his New Year's message to B. & O. employees. Mr. Willard's message follows in part:

"Although the depression has not yet passed, conditions in many respects are improving and I believe the improvement will continue, bringing more work for many now on furlough, and greater assurance of continuous employment to those now working. It is my earnest desire that this may be so."

$26,000,000 Improvements Recommended for Cape Cod Canal

As a result of a review by the Board of Engineers for Rivers and Harbors of the reports on Cape Cod Canal, Massachusetts, submitted in House Document 795, Seventy-first Congress, Third Session, which was requested in a resolution of the committee on rivers and harbors of the House, adopted June 13, 1934, the Chief of Engineers, Major General Edward M. Markham, has transmitted to J. J. Mansfield, chairman of the committee, the recommendations of the board with which he concurs, that the existing project be modified so as to provide for an open canal 32 feet deep, for a width of 540 feet in the land cut, 500 feet in a straight channel in Buzzards Bay to Wings Neck, and 700 feet beyond Wings Neck, for a harbor of refuge for small vessels, mooring basins, an improved lighting system and other accessory and minor features which may be deemed necessary and shall be in accordance with plans approved by the Chief of Engineers, at an estimated cost of $26,000,000 for construction; with $400,000 annually for operation, care and maintenance of the entire project, including the maintenance of the new bridges now under construction.

Canadian Roads Cut Rates on Damaged Grain Moving to U. S.

The way was opened last week-end for a flood of damaged Canadian grain to pour into the United States to be used for feeding live stock, suffering from drought-caused feed shortage.

Effective from December 31 until April 30, 1935, freight rates reduced 35 per cent from their present scale were announced by the Canadian National and Canadian Pacific, also announced was the replacing of the export rate for the domestic rate in shipments of grain to the United States via British Columbia ports.

So far this season around 5,000,000

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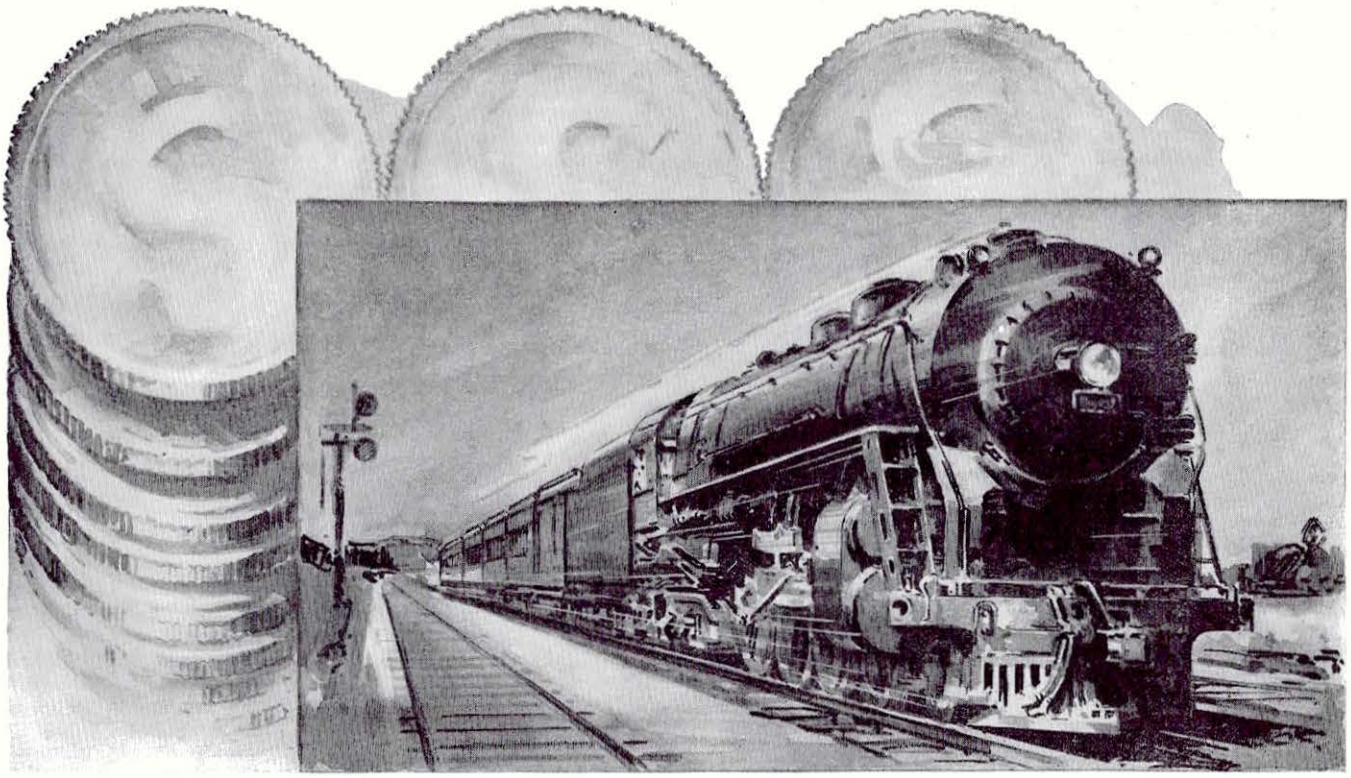


IT COSTS MONEY TO PROPEL EXCESS WEIGHT DAY IN AND DAY OUT

There are fundamentally two ways in which power can be produced to haul a train.

One, with all power produced in the main cylinders.

The other, part of the power produced in the main cylinders and the remainder produced as needed in auxiliary cylinders.

With the Booster to produce power as needed—locomotive weight for a given set of conditions is kept at a minimum.

This results in lower costs of operation and lower costs for locomotive maintenance as a whole.

The close tolerances essential to efficient Booster operation call for genuine repair parts made by Franklin.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

bushels of low grade and damaged wheat has been shipped to the United States for live stock feeding purposes. Estimates placed the amount available for export at 50,000,000 bushels.

Closing of navigation on the Great Lakes and the application of the domestic rate on shipments to the United States through British Columbia ports virtually prevented export of the damaged wheat. The situation led to the reduction to permit the export trade to continue. The reduction provides for a rate of 20 cents per 100 pounds on grains graded number six or lower from Calgary to Vancouver and 26 cents from Regina and Vancouver.

These rates are the same as the rates on grain for ocean export, which apply on all grades. The rates for domestic shipments from Calgary and Regina to Vancouver are 41½ and 51½ cents respectively.

Eastman Advocates Co-Ordinated Regulation

Co-ordinated regulation of all forms of transportation by a single commission was advocated by Co-ordinator Eastman in an address before the Reading Traffic Club and the Reading Chamber of Commerce on January 3. If the regulatory authority is to make the best possible progress, he said, clearly it must have a knowledge and a jurisdiction which will cover the entire situation. "It must know what the trucks, the busses, the steamships, the barges, the pipe lines, and the airplanes can do, as well as the railroads, and how all of these means of transport are or can be inter-related with public benefit. It must know what the costs are of the services which these various forms of transportation can furnish. If it is asked to fix a bottom for railroad rates, it must have assurance that it has a like measure of control over the rates of their competitors."

"The railroads still have a long lead as the nation's most important means of transportation", Mr. Eastman said, "and they will probably continue to hold it, but they have lost the degree of dominance which they once had. The new forms of transportation are not the only ones which have improved and hold forth promise of even greater improvement in the future. Railroad freight service is much faster and more dependable and more convenient than it was a dozen years ago, and there are good signs of returning vitality in railroad passenger service."

Winter and Holiday Travel Shows Large Increase

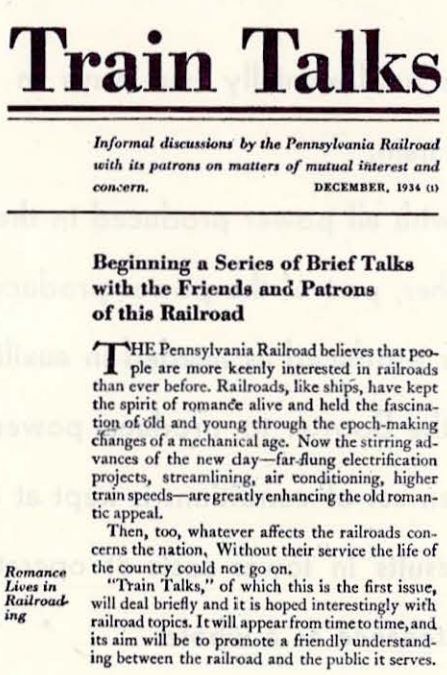
Travel to Florida and California as well as that over the Christmas and New Year holidays has shown a large increase this year, as compared with last. Travel to Florida has been especially spectacular, the movement starting in larger volume at an earlier date than heretofore and promising to continue throughout the season. The heaviest movement has been experienced in the eastern territory where the business of three railroads alone has shown an increase of 40 per cent during November and December, as compared with last year. Florida business from Chicago during that period has shown an increase of 20 to 25 per cent thus far. Service from Chicago this year has been improved by the establishment of two 27-hr. 10-min. trains, the Florida Arrow of the Pennsylvania which went into service for the first time on January 2, and the regular winter train, the Floridan, of the Illinois Central which was returned to service this year on January 3 on a schedule that is 3½ hr. faster than last year's.

Winter travel to California also has shown an increase this year. During the first part of December, the movement started lightly but increased to sizable volume towards the latter part of December.

The Christmas and holiday traffic this year was up approximately 20 per cent for the country as a whole, with some sections showing even larger gains. In the East, Christmas business showed an increase of from 20 to 25 per cent, while railroads operating out of Chicago experienced even greater increases. The business moving out of Chicago to the Southeast during Christmas was 30 to 40 per cent above that of last year. During both the Christmas and New Year periods, passenger stations with their large crowds, extra sections of trains, trains held up while passengers purchased tickets and other exigencies bore a marked resemblance to the appearance they had in 1929 and other years of heavy travel.

Pennsylvania Distributes "Train Talks" to Passengers

The form, entitled "Train Talks," shown in the accompanying illustration, is the first page of a four-page leaflet which has been issued by the Pennsylvania—the company's latest novelty in advertising. Copies will be distributed in both coaches and Pullman cars on trains throughout the Pennsylvania system.



Train Talks

Informal discussions by the Pennsylvania Railroad with its patrons on matters of mutual interest and concern. DECEMBER, 1934 (1)

Beginning a Series of Brief Talks with the Friends and Patrons of this Railroad

Romance Lives in Railroading

THE Pennsylvania Railroad believes that people are more keenly interested in railroads than ever before. Railroads, like ships, have kept the spirit of romance alive and held the fascination of old and young through the epoch-making changes of a mechanical age. Now the stirring advances of the new day—far-flung electrification projects, streamlining, air conditioning, higher train speeds—are greatly enhancing the old romantic appeal.

Then, too, whatever affects the railroads concerns the nation. Without their service the life of the country could not go on.

"Train Talks," of which this is the first issue, will deal briefly and it is hoped interestingly with railroad topics. It will appear from time to time, and its aim will be to promote a friendly understanding between the railroad and the public it serves.

The first page, as will be seen, is an introduction; the second shows a map of the company's lines, with descriptive matter, one item of which is that the tracks operated by the Pennsylvania would extend much farther than around the globe at the equator. Other subjects touched upon are the army of employees, the great number of investors, and the relation of the railroad to national industries.

The Canadian Roads in November

Net operating revenues of the Canadian Pacific for November amounted to $3,441,828, which contrasts with $3,585,809 in November of last year, a decrease of $143,981. Gross for the month totaled $11,184,505 showing an increase of $794,582 over the gross for November of last year, while operating expenses at $7,742,677, which includes pensions this year, showed an increase of $938,563 over the expenses for the corresponding month of 1933.

For the eleven months ended with November, net revenues are shown at $21,212,614, which compares with $17,615,707 for the corresponding period of last year, indicating an increase of $3,596,906. Gross for the eleven-month period of this year at $114,837,505 showed an increase of $10,480,224 over the gross for the same period of 1933, while operating expenses at $93,624,559 showed an increase of $6,883,317.

The Canadian National had November gross revenues of $13,782,020, an increase of $494,369 over November of last year, and net revenue of $1,700,014, an increase of $151,915. Operating expenses for the month, including pensions, were $12,082,006, an increase of $342,454.

For the eleven months ended November, the company reports gross revenues of $151,548,021, an increase of $15,381,776 over the $136,166,245 reported for the like period last year. Expenses totaled $139,896,074, an increase of $8,727,886 over the $131,168,187 a year ago, leaving net revenues of $11,651,947, an increase of $6,653,890 over the $4,998,058 reported a year ago.

Wood-Preservers Association

The American Wood-Preservers Association will hold its thirty-first annual convention at the Hotel Pennsylvania, New York, on January 22-4. While the convention will be given over largely to the discussion of reports and papers dealing with the improvement of the technique of wood preservation, numerous features are of interest to railway officers, who are responsible for the use of more than three-quarters of the output of the timber treating plants.

Among the features of railway interest to be considered on Tuesday afternoon are the reports of committees on Pressure and on Non-Pressure Treatment of Poles and on Service Records of Ties, of Bridge and Structural Timber and of Poles. Tuesday evening will be devoted to the consideration of treated materials in docks and wharves, with papers on the Use of Treated Material in Port Structures in New York Harbor by Francis J. O'Keefe, chief engineer, department of docks, New York City, and on Decay and Marine Borer Resistance of Creosoted Piles and Timbers in Tidewater by Dr. Hermann von Schrenk, consulting timber engineer, St. Louis, Mo.

On Wednesday forenoon, George W. Rear, engineer of bridges, Southern Pacific Company, will present a paper on

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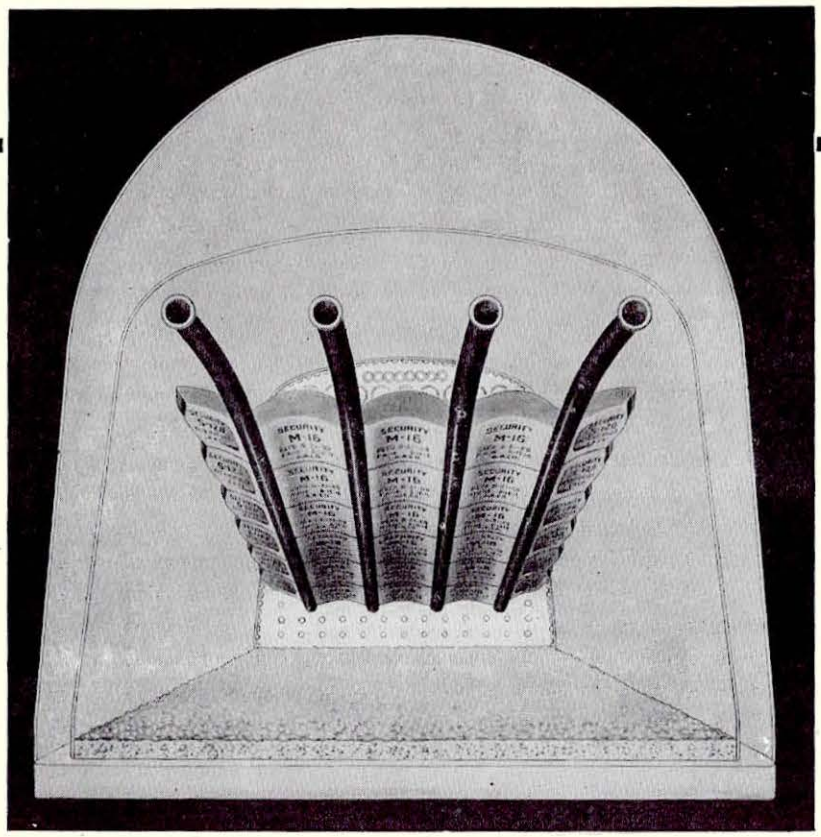

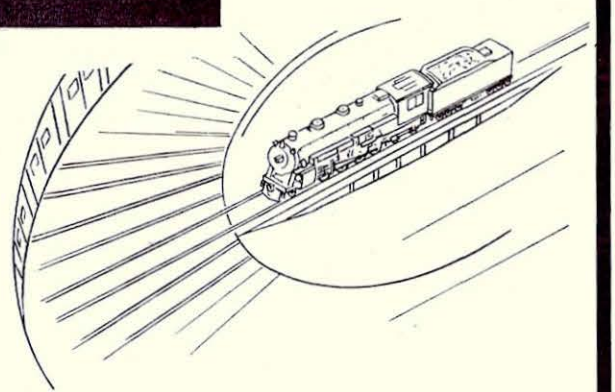

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the Southern Pacific's Experience With Treated Timber in Bridge Construction, and H. R. Clarke, engineer maintenance of way, C. B. & Q., will present a paper on the Experience of the Chicago, Burlington & Quincy With the Treatment of Crossties. At this session there will also be presented reports of committees on Marine Piling Service Records and on the Diversified Uses of Treated Wood.

Transportation Legislative Recommendation Expected Soon

Co-ordinator Eastman has transmitted to the Interstate Commerce Commission a part of his recommendations for transportation legislation, which, under the provisions of the emergency transportation act, are to be transmitted to the President and to Congress by the commission with its comments. Because it was awaiting these recommendations the commission omitted any recommendations for comprehensive transportation legislation from its annual report, made public on Saturday. It was expected that the President would touch on the subject in his message to Congress on Friday, as he has been discussing the subject with Mr. Eastman, but it was understood that any detailed discussion of the subject would await a special message later, after Mr. Eastman's program has been made public.

The President's special committee on transportation, of which Mr. Eastman is also a member, has also submitted to the President recommendations providing for the creation of a single commission or "super-commission" by enlargement and reorganization of the Interstate Commerce Commission with divisions having quasi-judicial regulatory jurisdiction over all forms of transportation. Such a plan has been outlined by Co-ordinator Eastman on several occasions, but it is understood that the committee recommendation also proposes to take some of the administrative and executive functions from the commission and transfer them to the Department of Commerce, along lines which were proposed in a study made under Secretary Roper's direction last year. The purpose is to bring about, by co-ordinated regulation, a national transportation system which will utilize each means of transport to the best advantage.

C. & N. W.'s "Four Hundred"

Appropriate ceremonies and a radio broadcast over Station WBBM featured the inauguration of seven-hour passenger train service between Chicago and the Twin Cities, when the Chicago & North Western's "Four Hundred" started on its initial run from Chicago at 3.30 p.m. on January 2 on a schedule of 408½ miles in 420 minutes. The exhaust of the locomotive was broadcast as the train pulled out of the North Western terminal at Chicago. This was followed by music from the WBBM studio until just before the train reached Glencoe, Ill., when the roar of the train passing through that station was broadcast. This served as the introduction to a speaking program at Glencoe in which Mayor Kelly of Chicago, H. W. Beyers, vice-president in charge of traffic of the Chicago & North Western, and other civic and business leaders took part. Similar ceremonies were held simultaneously at St. Paul, when the sister train started on its run to Chicago.

The delivery of this latter train to St. Paul for the initial south bound trip was the occasion of a test run on December 30. The train left Chicago at 7.45 a.m. and arrived in St. Paul at 2.45 p.m., at times attaining speeds in excess of 90 miles per hour. The 85 miles between Chicago and Milwaukee, Wisc., was covered in 75 minutes. As part of the advertising of the new train, the North Western is offering $1000 in prizes ranging from $500 to $5 for the 28 best stories recording the impressions and observations of passengers on their first trip on the "Four Hundred". This contest is open until March 31, 1935.

Pennsylvania Establishes Another Board of Adjustment

A fifth System Board of Adjustment, to settle differences with employees, has been agreed upon by the Pennsylvania with representatives of the company's "Miscellaneous Forces"—including such classes as station truckers, watchmen, janitors, other station attendants, storehouse workers and telephone exchange operators.

With the four boards previously formed —the train service, the roadway service, the shopmen and the telegraphers—this will bring about 83,000 employees into representation on these boards. This number is about 80 per cent of the total classified workers.

All questions are first to be discussed locally. The company and the employees have equal representation, and a two-thirds vote is necessary to reach a decision.

The new agreement is signed on behalf of the railroad company by the regional general managers and the Altoona Works managers; and for the employees by G. M. Hill, president of the Association of Miscellaneous Forces, Railway Employees of America, Pennsylvania System Division.

Mile-a-Minute on 15-inch Gage

Readers of the *Railway Age* may recall the Romney, Hythe & Dymchurch Railway on the southern coast of England, which was briefly described together with pictures of its locomotives, in the *Railway Age* of July 7, 1928, page 33. The road is 13 miles long, of 15-in. gage and carries on regular passenger and freight business. The activities of this railroad are brought to mind at this time by a brief article in the Illinois Central Magazine, for November, contributed by the English correspondent of that publication.

This magazine article has a picture of one of two locomotives of the 15-in. gage recently built, which are models of a Canadian Pacific type of standard gage. The five original Pacific-type locomotives of the English road were reduced copies of locomotives of the London & North Eastern. The Canadian Pacific design weighs eight tons and has a boiler pressure of 200 lb. to the inch. Both of these two engines have apparatus for taking water from track tanks.

The road was opened in 1927 and has recently enjoyed the patronage of 8,000 passengers in one day—visitors, presumably, to seashore resorts. The rails are Vignoles pattern, weighing 24 lb. to the yard, and the ties are 36 in. by 9 in. by 4½ in.

As the locomotives are so small that the engineman has to stand between the cab and the tender, Captain Howey, the owner of the road, has lately had a Rolls-Royce automobile chassis prepared for use on the 15-in. track, and this automobile is used for inspections and other trips during inclement weather. This adapted automobile has made speed of 60.2 miles an hour, hauling four coaches containing 48 passengers.

The cars and locomotives are fitted with an automatic vacuum brake, built by the Vacuum Brake Company, with half-size ejectors and miniature cylinders. The road has the usual English manual block system, and there are two interlockings, the apparatus for which was designed and made in the company's shops at Littlestone. Littlestone is the headquarters of the company and there is an enginehouse 80 ft. long by 21 ft. wide, capable of holding nine locomotives.

C. of C. Committee Recommends Standards for Highway Vehicles

A special committee of the Chamber of Commerce of the United States appointed to study and report on the problem of sizes and weights of commercial motor vehicles to be permitted on the highways of the various states has submitted a report, which the board of directors has placed before the membership for consideration at the next annual meeting, containing a series of recommendations for standards which, according to a minority report, are confined solely to the recommendations of the American Association of State Highway Officials "and have been carefully worded so as to eliminate technical language but also to carry accurately the essence of the recommendations of that association." The minority report is signed by J. J. Pelley, president of the Association of American Railroads, and L. O. Head, president of the Railway Express Agency, Inc., who assert that the recommendations, if adopted, would allow standards more liberal than now prevail in many states.

The committee says there is too great diversity among the states in the dimension and weight limits permitted to commercial motor vehicles and that this has seriously hampered the movement of commercial traffic across state lines, imposed serious difficulties on highway builders in constructing a uniform system of through highways, and placed manufacturers of large commercial vehicles in a quandary as to the limitations controlling design. It believes that the standards it has endorsed offer a proper basis for uniformity and therefore recommends that all states conform their limits to the standards proposed so far as their conditions permit.

Messrs. Pelley and Head call attention to the fact that the recommendations are the same that were submitted by the chamber to its membership in a referendum, on which the vote was 1,098½ opposed to 872½ in favor, and say that the committee has neither studied nor reported on the most important questions which were to receive answers. The majority recom-

Continued on next left-hand page

EXHAUST STEAM WILL HELP HAUL TRAINS

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EXHAUST steam blasted up the locomotive stack contains latent power . . . power that can help to turn the driving wheels of your locomotives. A large part of this latent power can be reclaimed and utilized by the Elesco feed water heater.

Through an Elesco feed water heater, the heat from a substantial part of the waste exhaust steam is transferred through the feed water back to the boiler, where it is transformed into energy at the locomotive cylinders.

Almost 4000 Elesco feed water heaters are reclaiming waste exhaust steam and thereby increasing sustained boiler capacity and providing a better fuel and water rate. *Why not investigate the possibilities of Elesco feed water heaters? Information cheerfully given without obligation.*

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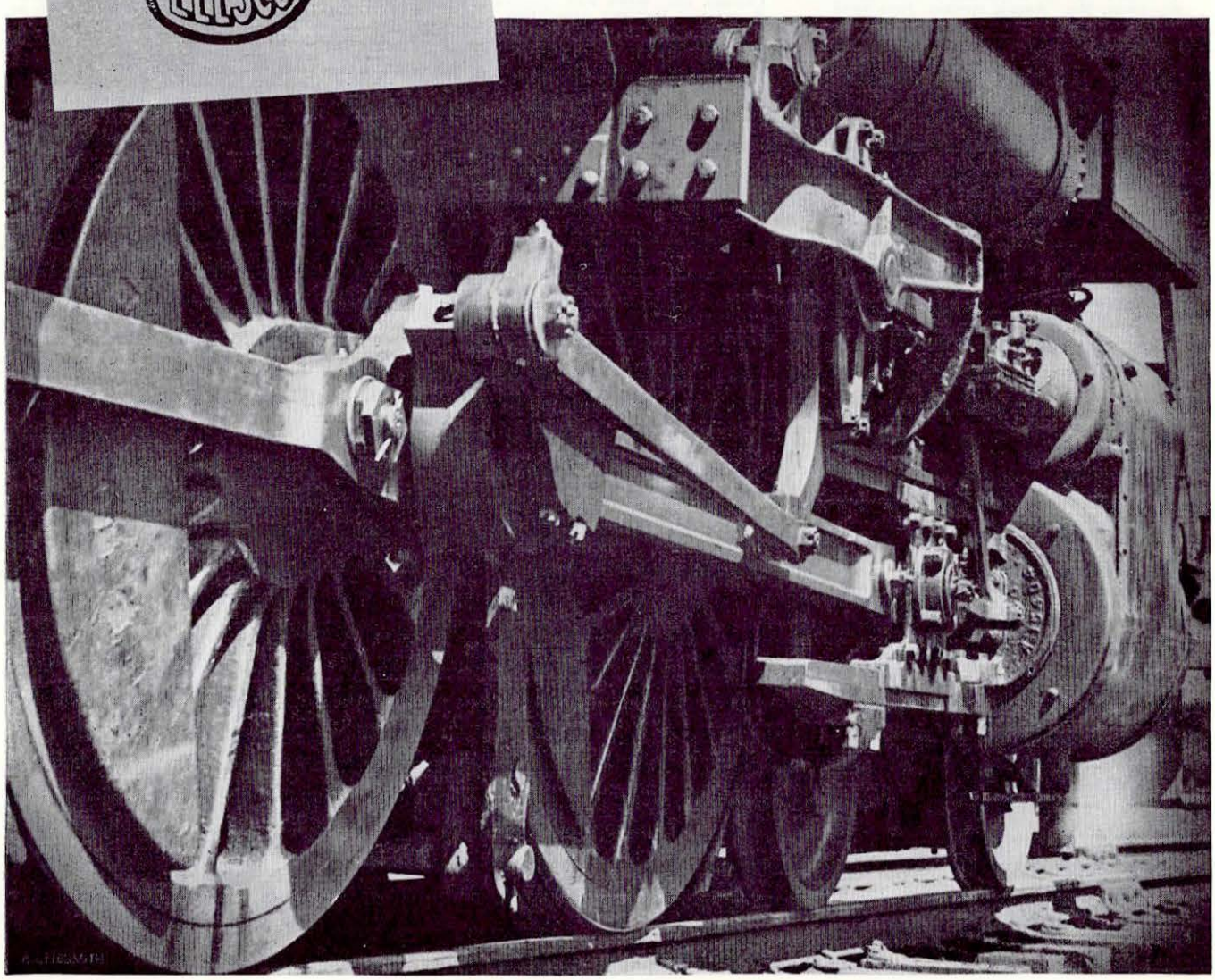

mendations, they say, would increase permissible weights on two-axle trucks in 44 states and the District of Columbia and would increase the permissible weights on three-axle trucks in a majority of the states. They take the position that, due to the great differences in conditions in the different states, any uniformity approaching the permissible dimensions and weights under the recommendations of the majority report is impossible.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 3400, Empire State Building, New York, N. Y. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago, Ill. To meet with Air Brake Association, Car Department Officers' Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers' Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 816 McCormick Building, Chicago, Ill. Annual meeting, September, 1935, Toronto, Ontario, Canada.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 13-15, 1935, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 18-19, 1935.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 15-17, 1935, Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y. Annual meeting, January, 1935, Chicago, Ill.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. H. Gurton, Mgr., Land Settlement and Development, C. N. R., St. Paul, Minn.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Division IV.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITOR'S ASSOCIATION.—John Ferrick, Missouri Pacific Lines Magazine, 2108 Missouri Pacific Lines Building, St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative). Exhibit by Tool Foremen Suppliers' Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—29 W. 39th St., New York, N. Y. Railroad Division.—Marion B. Richardson, Ahrens & Richardson, 30 Church St., New York, N. Y.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, January 22-24, 1935, Hotel Pennsylvania, New York, N. Y.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Building, Washington, D. C.

- Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.
- Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Annual meeting, June 18-20, 1935, Chicago, Ill.
- Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
- Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
- Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
- Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, June 25-27, 1935, Hotel Stevens, Chicago, Ill.
- Division II.—Transportation.—G. W. Covert, 59 E. Van Buren St., Chicago, Ill.
- Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York, N. Y.
- Division IV.—Engineering.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.
- Construction and Maintenance Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.
- Electrical Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.
- Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.
- Division V.—Mechanical.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill. Next meeting, June, 1935, Chicago, Ill.
- Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.
- Division VII.—Freight Claims.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.
- Division VIII.—Motor Transport.—George M. Campbell, 30 Vesey St., New York, N. Y.
- Car-Service Division.—C. A. Buch, Transportation Building, Washington, D. C.
- Accounting Department.—E. H. Bunnell, Vice-President, Transportation Building, Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Chief Clerk and Claim Agent, General Claims Department, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 15-17, 1935, Hotel Biltmore, New York, N. Y.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., 1519 Daily News Building, 400 W. Madison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. F. Flanagan, Detroit Graphite Company, Room 1158, 20 N. Wacker Drive, Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 S. Morgan St., Chicago, Ill. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 S. Main St., Los Angeles, Cal. Club not active at present.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—J. F. Brady, Main and Barton St., St. Louis, Mo. Operation suspended indefinitely.

CENTRAL RAILWAY CLUB OF BUFFALO.—M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Operation suspended indefinitely.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings temporarily suspended.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Building, Chicago, Ill. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, Washington, D. C.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Suite 322, 910 S. Michigan Ave., Chicago, Ill. Exhibit at A. R. E. A. Convention, March 11-14, 1935, The Coliseum, Chicago, Ill.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section (See Safety Section, Association of American Railroads).

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, excepting July at Los Angeles and October at Sacramento.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—(Merged with Association of American Railroads).

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton (Treas. and Asst. Sec.), First National Bank Building, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Building, Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Building, Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division and Motor Transport Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury, Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R. Division I.

RAILWAY TIE ASSOCIATION.—A. S. Fathman, 1252 Syndicate Trust Building, St. Louis, Mo.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1428 Broad Street Station Building, Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual meeting, September 17-19, 1935, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R. Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October 5-6, 1935, Cincinnati, Ohio.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. A. R. Division V, Equipment Painting Section.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—N. A. Walford, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, first Friday of each month, except July, August and September, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—D. J. Higgins, Gardner-Denver Company, 332 S. Michigan Ave., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 E. 98th St., Cleveland, Ohio. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

WESTERN RAILWAY CLUB.—C. L. Emerson, C., M., St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Construction

LEHIGH VALLEY.—Contracts have been let by this company for grade crossing elimination work as follows: To the Delta Construction Company, Hopewell, N. J., at Park avenue, Oak Tree, N. J., to cost about $57,500, and to the Weldon Contracting Company, Westfield, N. J., for work at Central avenue, Picton, N. J., to cost about $70,611.

Continued on next left-hand page

AMERICAN LOCOMOTIVE CO.

FOOD FOR THOUGHT—1

"FROM one point of view no organisations in the world are conducted with greater massed armies of trained intelligence, with more cohesion and individual efficiency, than are our great railway systems. On the other hand, as old institutions they are, perforce, surrounded with many legacies of the past and other attendant disadvantages. Foremost is the fact that much of their equipment is necessarily old and to decrease the proportion of old to new is the more difficult because of the comparative expense of such equipment. Herein, perhaps, lies the greatest handicap of all railways in combating other methods of transport which compete with entirely new and up-to-date mechanism. This is brought home when one reflects what the competitive and earning powers of railways would be if, by some miracle, all rolling stock, signal equipment and permanent way, &c., could be suddenly transformed into the best that is known to-day. The transformation would be a tremendous revelation and railways as a means of transport would again reign supreme and inviolate in their sphere. That there is efficiency of "input" cannot be denied, but the efficiency of "output" or what might be termed the "over-all commercial efficiency of operating," is a subject of research which we submit should be more carefully examined.

Was there ever a more appropriate time than now to delve deeper into the economics of this question?"

Continued next week

THE RAILWAY GAZETTE (London)
Nov. 28, 1934

30 CHURCH ST., NEW YORK, N.Y.

Supply Trade

At a meeting of the board of directors of the **National Malleable & Steel Castings Company,** Cleveland, Ohio, on December 19, **Henry F. Pope,** president, was elected chairman of the board and **Carl C. Gibbs,** assistant to president, was elected president of the company.

F. C. Harper, secretary and treasurer of the **American Sheet & Tin Plate Company,** Pittsburgh, Pa., subsidiary of the United States Steel Corporation, has been elected vice-president and general manager of sales, **J. I. Andrews,** vice-president, having voluntarily retired. **F. M. Fuller,** general manager of sales, has been appointed assistant to president; **Percy Cooke,** assistant secretary and assistant treasurer, has been elected secretary and assistant treasurer; **M. L. Gardner,** assistant treasurer, has been elected treasurer and **L. K. Hitchings** has been elected assistant treasurer.

O. A. Van Denburgh, Jr., assistant manager of the **Burden Iron Company,** Troy, N. Y., has been elected vice-president and general manager succeeding in the management of the company's business William E. Millhouse, president, who died in September. Mr. Van Denburgh was graduated from the Rensselaer Polytechnic Institute in 1913 with the degree of me-

O. A. Van Denburgh, Jr.

chanical engineer. He served with the Cambria Steel Company, Johnstown, Pa., until 1917, when he entered the Ordnance Department of the United States Army. He was later transferred to the Chemical Warfare Service, serving until 1919. At the close of the war he returned to the Cambria Steel Company, and subsequently was in the employ of the Aluminum Company of America at Pittsburgh, Pa., then for two and one-half years with the United States Navy as mechanical engineer in the Bureau of Engineers, leaving that service to go with the Burden Iron Company in 1923, where he served first as works engineer and later as assistant manager.

OBITUARY

William G. Mathias, who retired as assistant vice-president of the Tennessee Coal, Iron & Railroad Company in 1929, died in St. Petersburg, Fla., on December 18.

William Watts Macon, for 23 years identified with the editorial department of The Iron Age, during 14 years of that period as managing editor and editor-in-chief, died on January 1, 1935, at the Murray Hill Hospital, New York, following a cerebral hemorrhage. He was born in New York City on May 19, 1875, and was graduated from Cornell University as a mechanical engineer in 1898. At Cornell he was editor of the Sibley Journal of Engineering and upon his graduation from college was associated with the editorial department of the

Blank & Stoller

William Watts Macon

Engineering Record from 1898 to 1905. From 1905 to 1911 he was editor of the Metal Worker, following which he began his long service with The Iron Age. Early in 1930 he was appointed editor-in-chief but after a severe illness retired from that position at the beginning of 1932 and became consulting editor, in which capacity he served until the time of his death. He was a director of The Iron Age Publishing Company and was a member of a number of technical societies including the American Society of Mechanical Engineers, American Iron & Steel Institute, American Society of Heating and Ventilating Engineers, and American Management Association. He was a contributor to the Encyclopædia Britannica and during the war period was a member of a party of American trade journalists which visited Great Britain and France as guests of the British Government.

TRADE PUBLICATION

WELDING ELECTRODES AND ACCESSORIES.—A 16-page booklet, published by the General Electric Company, explains the character, function and chemical composition of the several coated welding electrodes manufactured by that company. Applications for these electrodes are shown and a table is included to show how to select the proper electrode. Accessories described include electrode holders, arc stabilizing reactors, aprons, grooves, scratch brushes, etc.

Equipment and Supplies

LOCOMOTIVES

THE CHICAGO GREAT WESTERN placed an order in December, 1934, for one 0-4-4-0 oil-electric switching locomotive of 800 hp., with the Westinghouse Electric & Manufacturing Company.

THE ELGIN, JOLIET & EASTERN does not intend to buy five Diesel-electric locomotives. This company was incorrectly reported in the *Railway Age* of December 29 as contemplating the purchase of this equipment.

THE WINTON ENGINE CORPORATION is constructing a two-car unit with a 3,600-hp. Diesel electric locomotive which will be tried out on various railroads within sixty or ninety days. The locomotive is so constructed that each car unit of 1,800-hp. (two 900-hp. engines) can be operated separately. It will be operated on the Baltimore & Ohio when completed and, later, on the Chicago, Burlington & Quincy to pull the "Aristocrat" between Chicago and Denver, Colo. The locomotive is similar to that recently ordered by the Atchison, Topeka & Santa Fe.

IRON AND STEEL

THE DELAWARE, LACKAWANNA & WESTERN has placed an order for 4,000 tons of steel rails and 3,000 tons of rail fastenings for immediate delivery. The rails, weighing 131 lb. to the yard, will be laid in main line tracks during the present winter. The Lackawanna had previously purchased, for use in 1934, 19,000 tons of rails and fastenings. J. M. Davis, president of the company, said that the ordering of rails was a further effort by the Lackawanna to provide maximum work for its forces during the winter months and to overcome unemployment in communities served by the railroad.

MISCELLANEOUS

THE MICHIGAN CENTRAL has placed an order with the Valve Pilot Corporation, New York, for 15 Loco Valve Pilots to be applied to passenger power.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC's two new streamlined locomotives ordered from the American Locomotive Company are to be equipped with SKF bearings on engine trucks and driving axles.

Air Conditioning

The Chicago & North Western will air-condition 135 passenger cars during 1935. This will give the railroad 24 completely air-conditioned trains operating in and out of Chicago. Of the 135 cars, 67 will be standard and tourist sleeping cars and 37 will be coaches, while the remaining 31 will include dining, parlor and observation cars. Mechanical and ice activated systems will be used, most of the work of installation being done in company shops.

Continued on next left-hand page

WHAT IS C.T.C.?

IT is a term applied to a system of railroad operation by means of which the movement of trains over routes and through blocks on a designated section of track or tracks is directed by signals controlled from a designated point without the superiority of trains. » » » » » » » » »

"Union" C. T. C. was developed to provide an economical means for the operation of trains by signal indications without the use of written train orders. Those dispatchers, and their immediate superiors, who have had experience with installations of the "Union" C. T. C. system, instances of which will be illustrated in subsequent advertisements, are among its most enthusiastic advocates, because to them it is a method for the faster, safer and more economical movement of trains.

Let our nearest district office explain the system to you in detail and estimate how much it will save on a typical location on your road. » » » »

865

1881 **Union Switch & Signal Co.** 1935

SWISSVALE, PA.

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

Financial

ALLEGHANY CORPORATION.—*Re-organization.*—Judge W. Calvin Chestnut, in the Federal court of Baltimore on December 29, approved a proposal for a reorganization of this corporation under the provisions of the National Bankruptcy Act. Testimony presented in the case showed that holders of more than 77 per cent of the corporation's bonds had approved of the plan.

CHICAGO & NORTH WESTERN.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon 55 miles of branch line between What Cheer, Ia., and Consol.

CHICAGO, ROCK ISLAND & PACIFIC.—*Reorganization Now Declared Not Feasible.*—The trustees have advised O. E. Sweet, director of the Bureau of Finance of the Interstate Commerce Commission, that the revenues of this road are too low to permit formulation of a reorganization plan at this time. Mr. Sweet had written to the trustees requesting information as to any progress made toward reorganization. Since the general meeting of creditors in New York on October 11, the trustees replied, other meetings have been held with representatives of individual groups but no one has suggested that a reorganization would be advisable at this time. The trustees are continuing to collect data to facilitate the preparation of a plan at the earliest possible time.

DENVER & RIO GRANDE WESTERN.—*Interest Payment Deferred.*—Interest payments on three bond issues of this road were deferred on January 1, the company taking advantage of the periods of grace allowed under the indenture of the bonds. The issues include the first 4s and 4½s and the Rio Grande Western first 4s.

ELGIN, JOLIET & EASTERN.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon part of a branch line from South Wilmington, Ill., to Goose Lake, 12.08 miles.

KANSAS & MISSOURI RAILWAY & TERMINAL COMPANY. — *Valuation.* — The Interstate Commerce Commission has issued a final valuation report as of December 31, 1927, finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be $1,100,000.

MINNEAPOLIS & ST. LOUIS.—*Reorganization.*—Quick reorganization and ending of the receivership of the Minneapolis & St. Louis was demanded on December 22 by Circuit Judge Wilbur F. Booth as he prepared to name a receiver to succeed W. H. Dremner, deceased. The court took under advisement the selection of a receiver, two names being presented—L. C. Sprague, who was sponsored by the reorganization committee representing bondholders, and John Junell, who was backed by preferred creditors and holders of receivers' certificates. "The sale of the road has been set for February 11," Judge Booth said, "and I expect some decisive step to be taken on or before that time. One of the chief duties of the receiver will be to bring one plan or another for reorganization to a conclusion." A petition asking that the Minneapolis & St. Louis be reorganized as a separate and intact system was submitted to the Minneapolis City Council on December 28 by employees of the road who have launched a campaign seeking public support against proposals to divide the railroad among several competing companies. The petition asks that the Interstate Commerce Commission or the Reconstruction Finance Corporation approve and assist in a plan for reorganization of the road and its retention as a separate and intact system.

MISSOURI-PACIFIC.—*Abandonment.*—The Interstate Commerce Commission has authorized this company and its trustees to abandon a line extending from Lake City Jct., Mo., to a point 5.4 miles westward.

NEW YORK, CHICAGO & ST. LOUIS.—*R.F.C. Loan.*—This company has applied for a two-year extension of its loan of $6,700,000 from the Reconstruction Finance Corporation, which matures February 27.

NORTH & SOUTH.—*Abandonment.*—The receiver has applied to the Interstate Commerce Commission for authority to abandon this company's entire line, from Salt Creek, Wyo., to Illco., 41 miles.

PENNSYLVANIA.—*Securities.*—The Interstate Commerce Commission has modified previous orders so as to limit to not exceeding $37,000,000 the amount of 30-year secured 4 per cent serial bonds that may be issued by this road and so as to authorize the road to assume obligation and liability in respect to not exceeding $23,000,000 of equipment trust certificates. The securities are to be used by the P.R.R. to finance P.W.A. loans for equipment and electrification. The $60,000,000 involved had previously been divided into $45,000,000 of the bonds and $15,000,000 of the equipment trust certificates.

PERE MARQUETTE.—*Abandonment.*—This road has been authorized by the Interstate Commerce Commission to abandon a branch line extending from Elmdale Mich., to Freeport, 6.19 miles.

Average Prices of Stocks and of Bonds

	Jan. 2	Last week	Last year
Average price of 20 representative railway stocks..	36.09	35.15	39.67
Average price of 20 representative railway bonds..	75.86	74.81	69.18

Dividends Declared

Cleveland, Cincinnati, Chicago & St. Louis.—Preferred, $1.25, quarterly; Common, $5.00, semi-annually, both payable January 31 to holders of record January 21.

Lehigh & Hudson River.—$1.00, quarterly, payable December 31 to holders of record December 20.

Michigan Central.—$25.00, semi-annually, payable January 31 to holders of record January 21.

Norfolk & Western.—Adjustment Preferred, $1.00, quarterly, payable February 19 to holders of record January 31.

Piedmont & Northern.—75c., quarterly, payable January 10 to holders of record December 31.

Pittsburgh, Bessemer & Lake Erie.—75c, semi-annually, payable April 1 to holders of record March 15.

Pittsburgh, Cincinnati, Chicago & St. Louis.—$2.50, semi-annually, payable January 19 to holders of record January 10.

Reading.—50c, quarterly, payable February 14 to holders of record January 17.

Railway Officers

EXECUTIVE

L. B. Unwin, comptroller for the Canadian Pacific at Montreal, Que., has been appointed vice-president and treasurer, with the same headquarters, to succeed **E. E. Lloyd,** retired. Mr. Unwin entered the service of the Canadian Pacific as a clerk in the office of the assistant superintendent at Chapleau, Ont., in 1908. He continued to serve in the Ontario district at

L. B. Unwin

Chapleau, White River and Schreiber until the outbreak of the World War, when he enlisted for service. In June, 1919, he reentered the service of the Canadian Pacific as an accountant at Sudbury, Ont., and subsequently served as statistician in the office of the general manager at Montreal, chief of the joint facilities bureau, and chief clerk to the comptroller. In July, 1926, he was appointed assistant auditor of miscellaneous accounts, and in February,

E. E. Lloyd

1928, he became assistant comptroller. Mr. Unwin was appointed comptroller in June, 1932.

Mr. Lloyd was born in Grimsby, England, on September 2, 1868. His family came to Canada and settled in Manitoba in July, 1876. After attending the public schools and studying law for one and one-half years, Mr. Lloyd entered the service

of the Canadian Pacific in December, 1887, in the stores department at Winnipeg, Man. In December, 1897, he became chief clerk in the stores department at Vancouver, B. C., and the following February was transferred in the same capacity to Montreal, Que. When the stores accounting was separated from the stores department in January, 1905, Mr. Lloyd went with the auditor of stores as chief clerk. In January, 1910, he became assistant auditor of stores and mechanical accounts, and in August, 1913, was appointed auditor of the department. Mr. Lloyd was appointed auditor of disbursements in March, 1918, and assistant comptroller in February, 1921, which position he held until February, 1928, when he became comptroller. He became vice-president and treasurer in June, 1932.

James W. Price, chief clerk to the vice-president of the Baltimore & Ohio, has been appointed assistant to the vice-president, with headquarters at Baltimore, Md., succeeding the late **F. X. Milholland.** Mr. Price is 47 years old and was born in

J. W. Price

Glenville, Pa. After graduating from high school and business college, he came to Baltimore, where he pursued his studies at night in business and finance in several local colleges. Mr. Price has been with the Baltimore & Ohio continuously since April, 1906, having started in the office of the auditor of coal and coke receipts, at Baltimore, where four years later he was made secretary to the auditor. In 1912, he was transferred to the office of second vice-president, becoming the latter's secretary in 1916, and being advanced to chief clerk to the senior vice-president in May, 1921, which position he held until his present promotion.

FINANCIAL, LEGAL AND ACCOUNTING

E. A. Leslie, deputy comptroller for the Canadian Pacific at Montreal, Que., has been appointed comptroller, with the same headquarters, succeeding **L. B. Unwin,** promoted. Mr. Leslie was born at Montreal, Que., on July 11, 1895, and received his higher education at McGill University, from which he was graduated in 1916, with a B.Sc. degree. In July, 1919, after serving in the World War, he entered railroad service with the Canadian Pacific as clerk in the general manager's office at Montreal. In December of that year he became secretary to the general manager,

E. A. Leslie

and the following year he was appointed chief clerk, Toronto Terminal division. In 1921, he became statistician in the general manager's office. From 1925 to 1928, he served as chief joint facility accountant. In 1928, he was appointed assistant comptroller, being appointed deputy comptroller in June, 1932.

Thomas L. Ennis, assistant to the general counsel of the Delaware & Hudson, has been appointed general counsel, with headquarters at New York, to succeed **H. T. Newcomb,** who has retired as vice-president and general counsel. Mr. Ennis was graduated from Union College in 1914 and from Columbia University Law School in 1917. He was admitted to the Bar of New York, in 1917. Mr. Ennis served in the United States Navy from 1917 to 1919, becoming a line ensign, and from 1919 until

T. L. Ennis

1927 he was associated with the firm of Messrs. Hughes, Schurman and Dwight. Mr. Ennis has been assistant to the general counsel since March, 1927.

Mr. Newcomb was born on January 4, 1867, at Owosso, Mich., and was educated in the public schools and at Columbian (now George Washington) University. He was employed in the accounting department of the Chicago, Milwaukee & St. Paul, and subsequently by the Interstate Commerce Commission, from 1888 to 1895. From 1895 to 1899 he was chief of the Transportation section in the United States Department of Agriculture and from 1899 to 1901, was with the division of agriculture of the twelfth United States Census. During the later years of his service in Washington he lectured at Columbian University on statistics and transportation. In 1901 he resigned from federal service to become editor of the Railway World. About two years later Mr. Newcomb began the practice of law, appearing in 1902 and 1903 as one of the counsel for the Philadelphia & Reading Coal & Iron Company, before the Anthracite Strike Commission. From 1903 until 1916 he was engaged in law practice in Washington, in the latter years as the senior member of the firm of Newcomb, Churchill and Frey (later Newcomb & Frey) which he organized in 1907. In 1916 he moved to New York City and after five years' general practice in that city became general solicitor of the Delaware & Hudson, which

(c) Blank & Stoller

H. T. Newcomb

position he held until he was appointed general counsel in 1926. In 1930 Mr. Newcomb was appointed vice-president in addition to the position of general counsel.

OPERATING

The Chicago, Rock Island & Pacific has consolidated its St. Louis and Kansas divisions. **G. W. Rourke,** division superintendent of the Kansas division, with headquarters at Kansas City, Mo., has had his jurisdiction extended over the consolidated divisions, and **C. B. Pratt,** division superintendent, with headquarters at Herington, Kan., has been transferred to Cedar Rapids, Iowa, to succeed **L. J. Hayes,** who has been appointed trainmaster at Manly, Iowa.

David S. Alonso, assistant superintendent of the Mexico division of the National Railways of Mexico, has been appointed superintendent of the Cardenas division, with headquarters at San Luis Potosi, S. L. P., succeeding **M. Ramirez,** who has been granted a leave of absence because of illness. **A. E. Vera,** superintendent of terminals at San Luis Potosi, has been appointed superintendent of the Gulf division, with headquarters at Monterrey,

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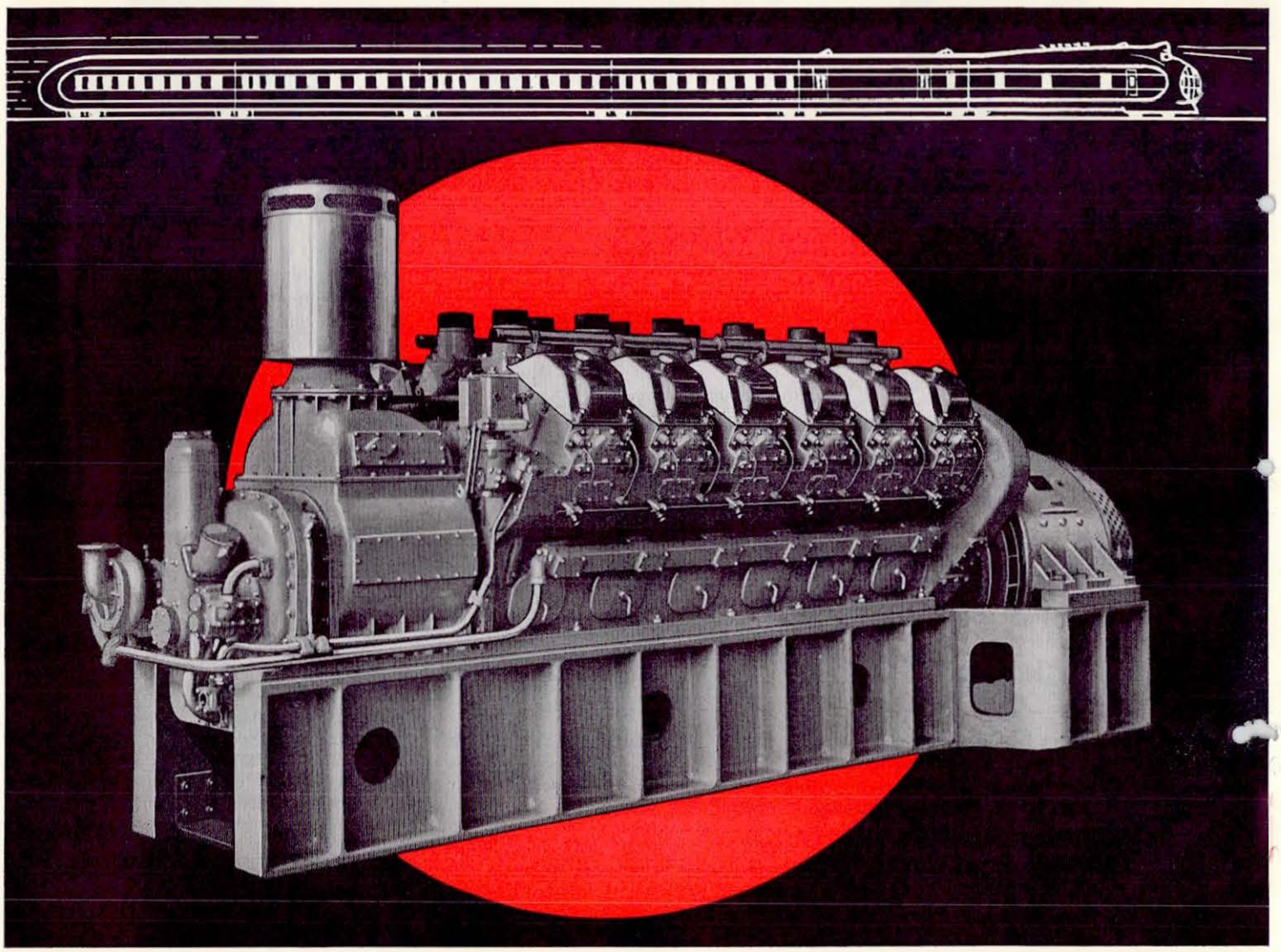
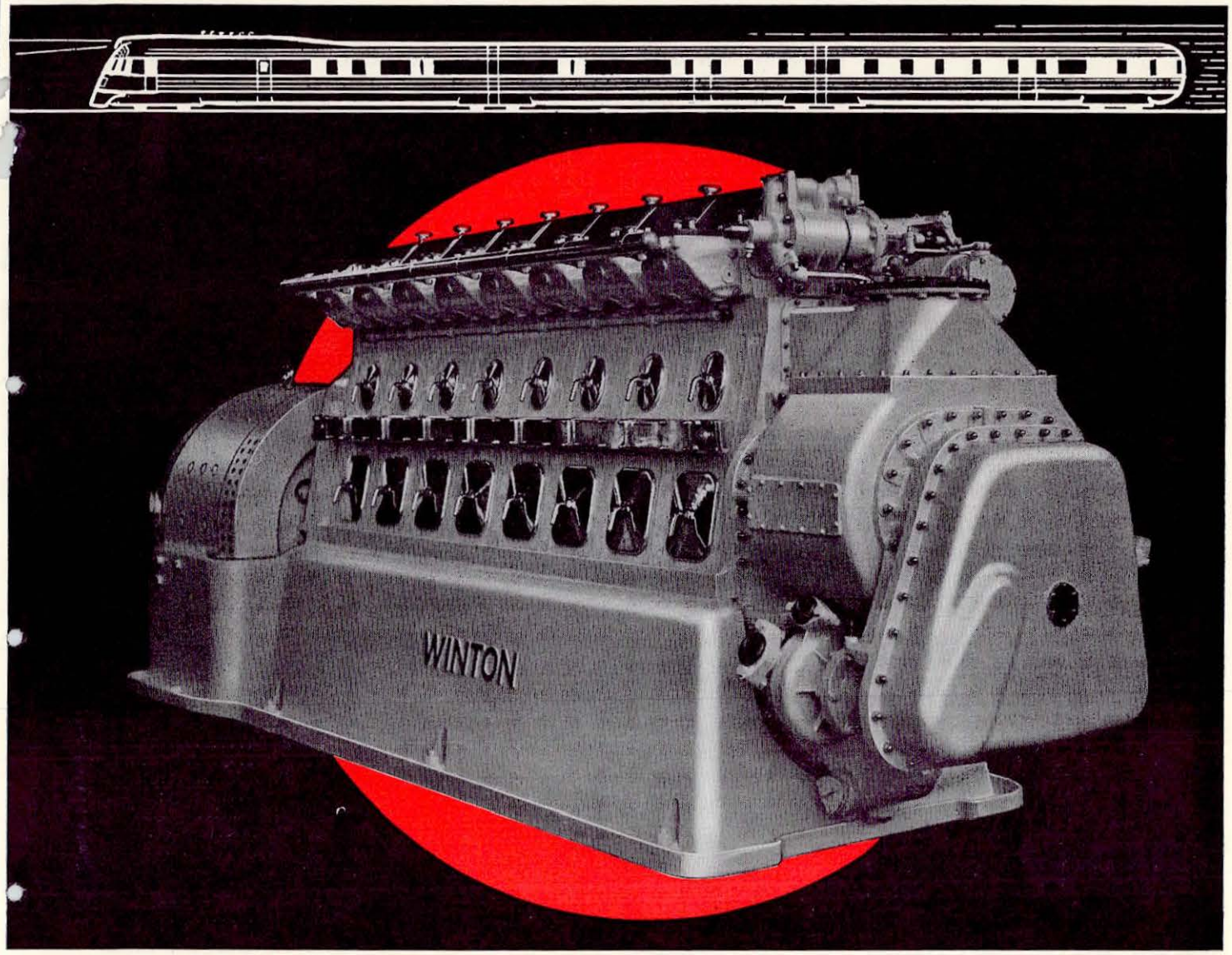
WINTON-DIESEL

Engines

MADE RAILROAD HISTORY IN 1934





THE year just passed witnessed the rise of a new aspirant for a place in the sun in the railroad world - - the Diesel engine. Developed by Winton to meet the railroads' need for reduced operating costs, Winton-Diesel engines made railroad history in 1934. The Burlington Zephyr powered by an eight-cylinder, two-cycle, 600 h.p. Winton-Diesel engine, made the longest, fastest non-stop run in railroad history between Denver and Chicago. So remarkable has been the traveling public's acceptance of the new Zephyr in regular schedule operation that the increase in passengers has necessitated the addition of a new car to this train. The new Union Pacific's M-10001, powered by a twelve-cylinder, V-type, two-cycle, 900 h.p. Winton-Diesel engine, set the record for the 3260 mile run from Los Angeles to New York at 56 hours and 55 minutes. Such outstanding performance justifies the confident prediction that 1935 will see a decided extension of Winton-Diesel applications in the railroad field.

★ *You are cordially invited to inspect our exhibit at the 1935 National Motor Boat Show, Grand Central Palace, New York City, January 18 to 26* ★

WINTON ENGINE CORPORATION

CLEVELAND, OHIO U. S. A.

N. L. **Basiliso Ortega,** has been appointed relief superintendent with headquarters at Mexico City.

W. J. McLean, assistant superintendent on the Canadian Pacific, whose promotion to superintendent of the Kettle Valley division was noted in the *Railway Age* for December 15, has been connected with this company for 31 years. He entered the service of the Canadian Pacific in 1903 as an engine wiper at Broadview, Sask. From 1903 to 1915, he served as a locomotive fireman and engineman, and from 1917 to 1929, he held the positions of trainmaster and assistant superintendent at Medicine Hat, Alta. He was then transferred to Field, B. C., and thence to North Bend, being located at the latter point at the time of his promotion to superintendent.

ENGINEERING AND SIGNALING

J. H. Morgan, acting engineer maintenance of way of the Florida East Coast, with headquarters at St. Augustine, Fla., has been appointed engineer maintenance of way at that point, succeeding **W. G. Brown** who died on July 14. A sketch of Mr. Morgan's railway career appeared in the *Railway Age* of August 11, 1934, page 187.

SPECIAL

Robert M. Van Sant, editor of the Baltimore & Ohio Magazine, has been appointed director of public relations for the Baltimore & Ohio, reporting to the president, with headquarters at Baltimore, Md. He will also continue his duties as editor of the Baltimore & Ohio Magazine. Mr. Van Sant was born in Newark, N. J., in 1885, where he attended the public schools. After a year's employment in a New York bank, he entered Princeton University, graduating in 1907 with an A.B. degree. He entered the advertising business in the same year and later entered the

Robert M. Van Sant

promotion department of Collier's Weekly, where he edited their house organ until 1913. On the latter date he became editor of the Baltimore & Ohio Magazine. Mr. Van Sant served as major of infantry in the Army during the World War and upon his discharge from the army in 1919 he resumed his duties with the Baltimore & Ohio. Mr. Van Sant has been secretary of the Baltimore & Ohio Railroad Glee Club since its organization in 1914. He also organized the B. & O. Post of the American Legion in 1920. During 1933 and 1934 he was resident representative in charge of the Baltimore & Ohio exhibit at a Century of Progress.

OBITUARY

William Sproule Dies

William Sproule, who retired as president of the Southern Pacific System in 1928, died at his home in San Francisco, Cal., on January 1. Mr. Sproule, prior to his retirement, had been an officer of the Southern Pacific for more than 40 years and had served as its president for 17 years. He was born in Ireland in 1853 and came to New York when a boy. He first engaged in the mercantile business in California. Mr. Sproule entered the service of the Southern Pacific as a freight clerk in 1882. From 1887 to 1897 he was assistant general freight agent of the Pacific System.

William Sproule

In the latter year he was promoted to the position of general freight agent and the next year he became general traffic manager. Mr. Sproule left railway service in 1906 to become traffic manager, a director and a member of the executive committee of the American Smelting & Refining Company. During 1910 and 1911 he was president of the Wells Fargo & Company, returning to the Southern Pacific in the latter year as its president. During the period of the World War when the operation of the railways was directed by the Railroads' War Board, Mr. Sproule was chairman of the Western department of this board. Under government operation of the railways he was district director of the Central Western Region of the United States Railroad Administration from July, 1918, to January 1, 1920. On the latter date he resumed his duties as president of the Southern Pacific. Mr. Sproule's retirement from the presidency of that road in 1928 terminated a successful career in the transportation business which extended over a period of more than 46 years.

John H. Beggs, purchasing agent of the Chicago & Eastern Illinois, whose death on December 18 was noted in the *Railway Age* of December 22, was born on July 11, 1869, at Belfast, Ireland. He first entered railway service in February,

John H. Beggs

1888, in the stores department of the Atchison, Topeka & Santa Fe, later serving as chief clerk to the master mechanic and the mechanical superintendent on this road. In July, 1905, he went with the C. & E. I. as chief motive power clerk, later serving as maintenance of equipment accountant. In June, 1913, he was promoted to purchasing agent, which position he held until his death. His headquarters were at Chicago.

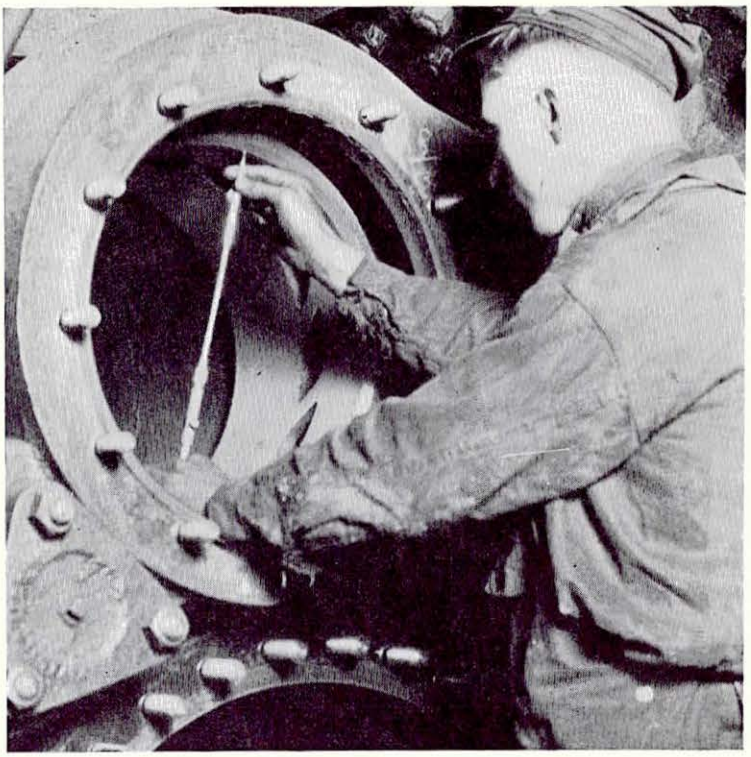
David Walker Lum, who retired in 1931 as special engineer of valuation for the Southern at Washington, D. C., died at his home in Washington on December 27 of heart disease. Prior to assuming that position Mr. Lum was, from 1904 to 1911, chief engineer maintenance of way and structures. He was born in 1855 at Newark, N. J. Before entering the service of the Southern Mr. Lum had served in the engineering departments of the Pennsylvania, the Delaware, Lackawanna & Western, and the Chesapeake & Ohio.

William O. Moody, mechanical engineer of the Illinois Central, who died on December 25, as noted in the *Railway Age* for December 29, was born in 1871, at Chicago. He first entered railway service in 1890 as a machinist apprentice on the Illinois Central. From 1893 to 1896, he was out of railway service, returning to the Illinois Central at the end of this period as chief draftsman. During 1903 and 1904, Mr. Moody served as a foreman in the car department on the construction of steel passenger cars, then returning to the position of chief draftsman. In 1906, he was appointed mechanical engineer with headquarters at Chicago, which position he held continuously until his death.

EXPEDITED SCHEDULES for trains of the Japan Government Railways became effective on December 1, 1934, according to a recent issue of "Travel News," a publication of the Japan Tourist Bureau. On that date, when the new timetable became effective, three new short-cuts at different places between Tokyo and Nagasaki were opened to main line traffic. Among the trains which have been accelerated are the "Fuji" and "Sakura," operating daily between Tokyo and Shimonoseki.

For The VITAL WEARING PARTS

Inside The Valve Chambers



BUSHINGS, Bull Rings and Packing Rings are the most vital parts in a valve chamber. Their resistance to wear and high temperatures plays a big part in the efficiency of a locomotive and its fuel consumption.

HUNT-SPILLER *Air Furnace* GUN IRON possesses the wear-resisting properties which these parts must have to meet the present day requirements of steam tight operation and economical maintenance.

Bushings, Bull Rings and Packing Rings made from HUNT-SPILLER *Air Furnace* GUN IRON are being used by most all the leading railroads to prevent waste of fuel, loss of power, and high maintenance costs, not only in the valve chambers but also in the cylinders.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
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Valve Bull Rings
Crosshead Shoes
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Parts Finished For Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing for Cylinders and Valves
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Cylinder Snap Rings
Valve Rings All Shapes

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HUNT-SPILLER *Air Furnace* GUN IRON

The Aristocrat

DeVilbiss Spray-Painting for the C. B. & Q.

Burlington Route

The Chicago, Burlington & Quincy Railroad knows the importance of quality and efficiency in painting operations—and for years has used DeVilbiss Spray-Painting Equipment.

Smoother, more even paint jobs improve the appearance of cars, locomotives, structures and buildings—and also afford better protection. More efficient equipment means faster painting at lower cost. These are sound reasons why successful railroad operators are standardizing on DeVilbiss Spray-Painting and Canopy Exhaust Equipment.

It will pay you to investigate the latest developments in spray-painting, and their application to your particular needs. Send for your local DeVilbiss representative now, or write us direct.

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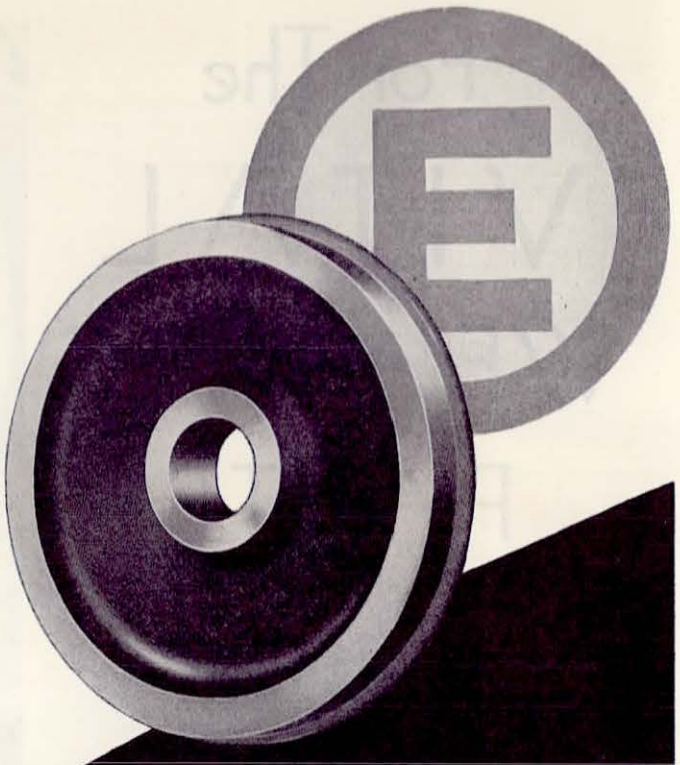

ROLLED STEEL WHEELS

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EDGEWATER STEEL COMPANY
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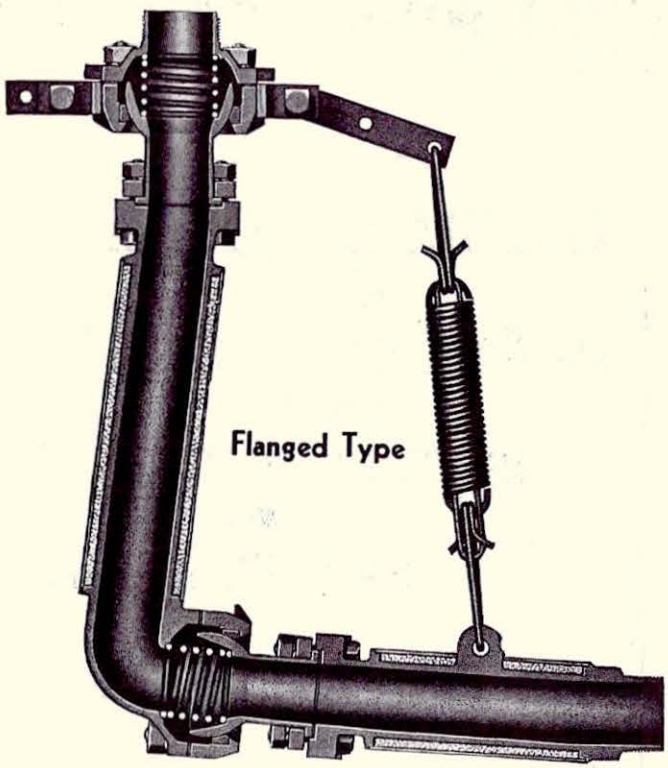
EDGEWATER

BARCO STEAM HEAT CONNECTIONS

ON THE 50 NEW STREAMLINED COACHES FOR THE NEW HAVEN



MODERNISTIC, streamlined, light weight and air-conditioned, the fifty new coaches just delivered to the New Haven Railroad represent the last word in passenger car design, construction and comfort.

The application of BARCO Steam Heat Connections to these coaches is highly significant. The efficiency and economy of heating, are factors of growing importance in the construction of all new passenger equipment.

BARCO Steam Heat Connections deliver steam at maximum pressures, with minimum friction loss and without leaks, failures or delays.

The savings effected in fuel, materials and labor are helping many railroads to reduce the cost of passenger train operation. Is your road enjoying these economies?

Barco Manufacturing Co.
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In Canada
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In Canada
Winnipeg—Vancouver

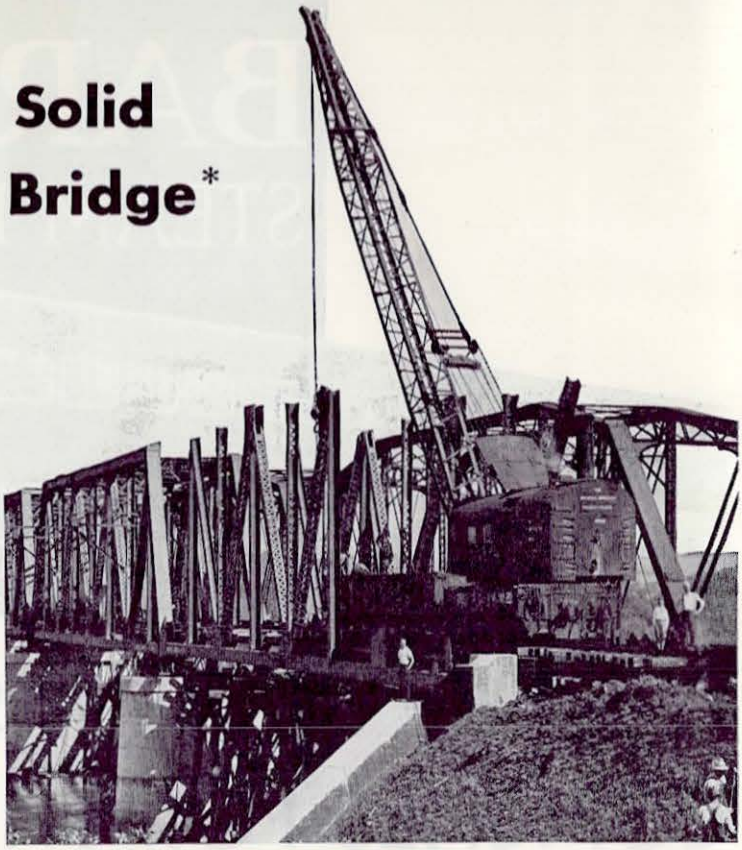
BARCO STEAM HEAT CONNECTIONS

ON THE First Solid Steel-Deck Railroad Bridge*

The new nine-span bridge superstructure, built for the Susquehanna River crossing of the Reading Company, marks the first use of a solid steel deck on a railroad bridge.

The Phoenix Bridge Co., in erecting this superstructure, used two Industrial Brownhoist cranes; one of 60, the other of 50 tons capacity. Commenting on their cranes, this company says, "We have used Industrial Brownhoists since 1916 and our experience with them has been very satisfactory. The cost of maintenance has been very reasonable, considering the heavy work required of them."

** Described in November 22nd issue of Engineering News Record.*



GENERAL OFFICES: BAY CITY, MICHIGAN

INDUSTRIAL BROWNHOIST

NEW YORK, PHILADELPHIA, CLEVELAND, CHICAGO

MAGNUS COMPANY

(INCORPORATED)

Journal Bearings

AND

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A. R. A. STANDARD COUPLERS

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STEEL CASTINGS

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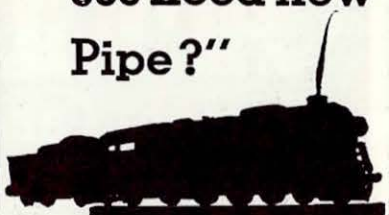

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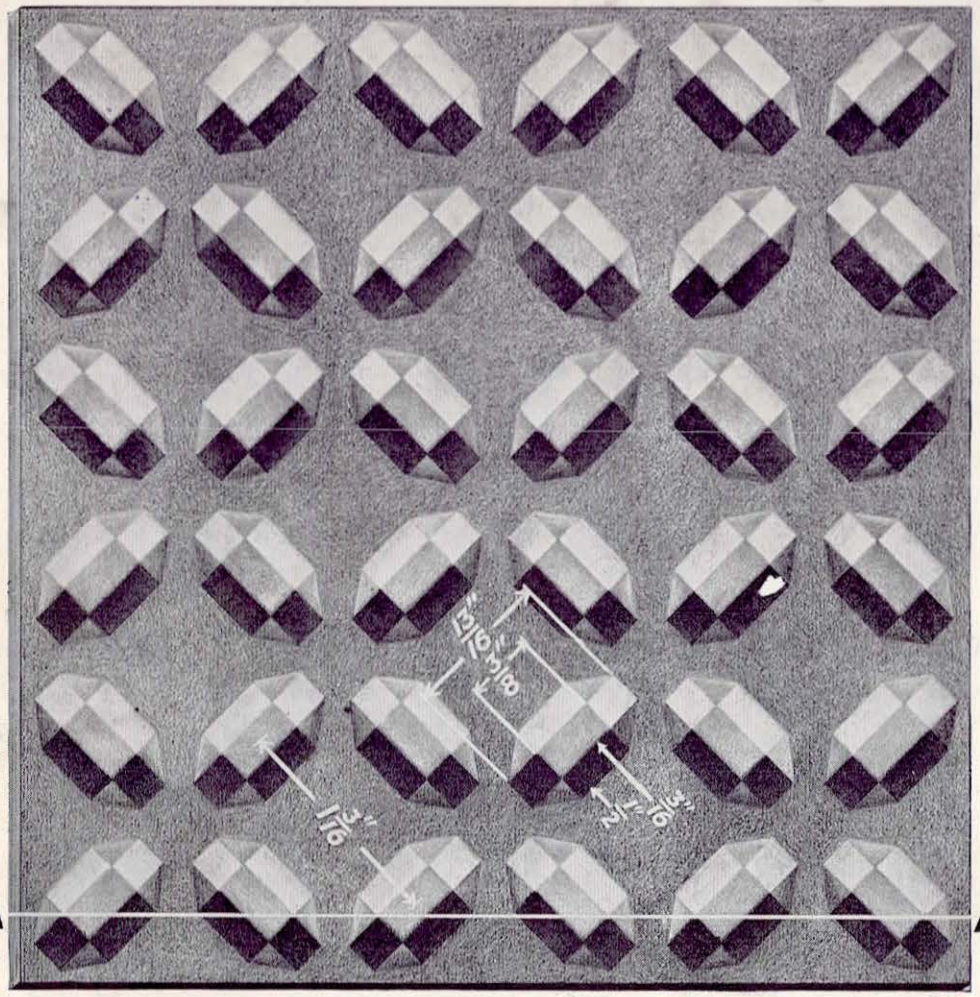

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